Application Search

Fredman 09/829,467

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:753071 HCAPLUS
DOCUMENT NUMBER: 135:303873
ENTRY DATE: Entered STN: 16 Oct 2001
TITLE: Fluorescent labeled nucleotides, synthesis and application as probes and primers
INVENTOR(S): Shinoki, Hiroshi; Inomata, Hiroko; Kojima, Masayoshi; Sudo, Yukio; Seshimoto, Osamu
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
INT. PATENT CLASSIF.:
MAIN: C07H019-10
SECONDARY: C07H019-20; C07H021-00; C09K011-06; C12N015-09; C12Q001-68; G01N033-58; C07D209-08; C07D209-30; C07D403-06; C07D403-14
CLASSIFICATION: 28-1 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 3, 9
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001288197	A2	20011016	JP 2000-107675	20000410
US 2002064782	A1	20020530	US 2001-829467	20010409 <--
EP 1152008	A2	20011107	EP 2001-107864	20010410
EP 1152008	A3	20020320		
EP 1152008	B1	20050209		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: JP 2000-107675 A 20000410
PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001288197	ICM	C07H019-10
	ICS	C07H019-20; C07H021-00; C09K011-06; C12N015-09; C12Q001-68; G01N033-58; C07D209-08; C07D209-30; C07D403-06; C07D403-14
	IPCI	C07H0019-10 [ICM,7]; C07H0019-20 [ICS,7]; C07H0021-00 [ICS,7]; C09K0011-06 [ICS,7]; C12N0015-09 [ICS,7]; C12Q0001-68 [ICS,7]; G01N0033-58 [ICS,7]; C07D0209-08 [ICS,7]; C07D0209-30 [ICS,7]; C07D0403-06 [ICS,7]; C07D0403-14 [ICS,7]
US 2002064782	IPCI	C12Q0001-68 [ICM,7]; C07H0021-04 [ICS,7]; C12P0019-34 [ICS,7]
	IPCR	C07H0021-00 [I,A]; C07H0021-00 [I,C]
	NCL	435/006.000
	ECLA	C07H021/00G <--
EP 1152008	IPCI	C07H0019-06 [ICM,6]; C07H0019-16 [ICS,6]; C07H0021-00 [ICS,6]; C12Q0001-68 [ICS,6]; G01N0033-53 [ICS,6]
	IPCR	C07H0021-00 [I,A]; C07H0021-00 [I,C]
	ECLA	C07H021/00G

OTHER SOURCE(S): MARPAT 135:303873
ABSTRACT:
The present invention provides a fluorescent substance which is represented by

a formula: A-B-C wherein A is a residue of natural or synthetic nucleotide, oligonucleotide, polynucleotide, or derivative thereof, and binds to B at a base moiety in said residue; B is a divalent linking group or a single bond; and C is a derivative of fluorescent dye having 0 or 1 sulfonate or phosphate moiety. Fluorescent dye is cyanine, melocyanine, or styryl. Preferably A is AMP, ADP, ATP, GMP, GDP, GTP, CMP, CDP, CTP, UMP, UDP, UTP, TMP, TDP, TTP, 2-Me-AMP, 2-Me-ADP, 2-Me-ATP, 1-Me-GMP, 1-Me-GDP, 1-Me-GTP, 5-Me-CMP, 5-Me-CDP, 5-Me-CTP, 5-MeO-CMP, 5-MeO-CDP, 5-MeO-CTP. B is preferably -CH2-, -CH=CH-, triple bond, -CO-, -O-, -S-, -NH-, or aminoaryl. Synthesis of labeled nucleic acids using the nucleotides via reverse transcription, terminal transferase reaction, random prime method, PCR, or nick translation, is claimed. The fluorescent substance of the present invention is useful as label for nucleic acids, reagent for detecting nucleic acids, or diagnostic reagent. Kits for nucleic acid detection are claimed. Synthesis of 8 indolenine cyanine compds. and conjugation with dUTP, and use for DNA probe preparation, are described.

SUPPL. TERM: fluorescent labeled nucleotide synthesis probe primer; cyanine melocyanine styryl nucleotide synthesis probe primer

INDEX TERM: Diagnosis
(agents; fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: Phosphates, biological studies
Sulfonates
ROLE: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(dye containing; fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: Cyanine dyes
Fluorescent dyes
Test kits
(fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: Nucleotides, preparation
Oligonucleotides
Polynucleotides
ROLE: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: Nucleic acid amplification (method)
(terminal transferase reaction, use in labeled nucleic acid synthesis; fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: PCR (polymerase chain reaction)
Reverse transcription
(use in labeled nucleic acid synthesis; fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: **23065-05-6**, Styryl
ROLE: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: **366451-16-3P 366451-17-4P**
366451-18-5P 366451-19-6P
366451-20-9P 366451-21-0P
366451-22-1P 366451-23-2P

ROLE: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

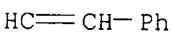
INDEX TERM: **56-65-5**, 5'-ATP, reactions **58-64-0**, 5'-ADP, reactions **58-97-9**, 5'-UMP, reactions **58-98-0**, 5'-UDP, reactions **61-19-8**, 5'-AMP, reactions **63-37-6**, CMP **63-38-7**, CDP **63-39-8**, 5'-UTP **65-47-4**, 5'-CTP **85-32-5**, 5'-GMP **86-01-1**, 5'-GTP **95-50-1**, 1, 2-Dichloro benzene **122-51-0**, Triethyl orthoformate **146-91-8**, 5'-GDP **365-07-1**, DTMP **365-08-2**, TTP **491-97-4**, TDP **628-89-7 1173-82-6**, DUTP **1173-82-6D**, DUTP, aminoaryl **1927-31-7**, DATP **2056-98-6**, DCTP **2564-35-4**, DGTP **3590-36-1** **4224-70-8**, 6-Bromo hexanoic acid **14315-97-0** **20309-92-6 25981-83-3 39923-67-6** **39923-68-7**, 2-Methyl-ADP **42467-24-3**, 2-Methyl-ATP **52940-67-7 52988-98-4** **76528-21-7 80677-38-9 112242-04-3** **130536-69-5 327174-86-7** **366451-24-3**
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: **366451-26-5DP**, bromide **366451-27-6DP**, bromide **366451-28-7DP**, bromide
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: **75-03-6**, Ethyl iodide **62306-05-2**
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reactant; fluorescent labeled nucleotide synthesis and application as probes and primers)

INDEX TERM: **366451-25-4DP**, iodide
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reactant; fluorescent labeled nucleotide synthesis and application as probes and primers)

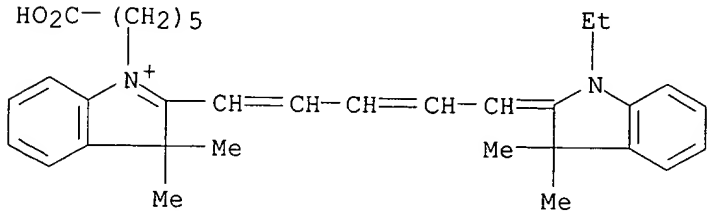
IT **23065-05-6**, Styryl
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(fluorescent labeled nucleotide synthesis and application as probes and primers)
RN 23065-05-6 HCAPLUS
CN Ethenyl, 2-phenyl- (9CI) (CA INDEX NAME)



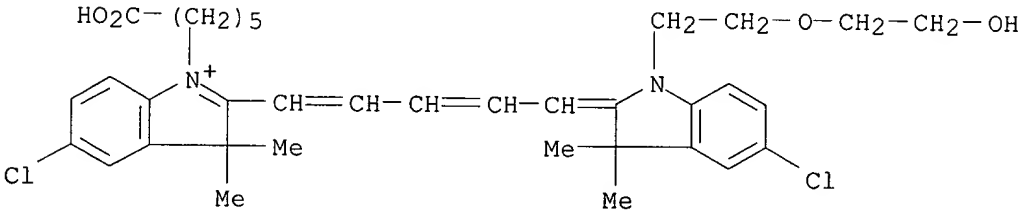
IT **366451-16-3P 366451-17-4P 366451-18-5P**
366451-19-6P 366451-20-9P 366451-21-0P
366451-22-1P 366451-23-2P
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN

(Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

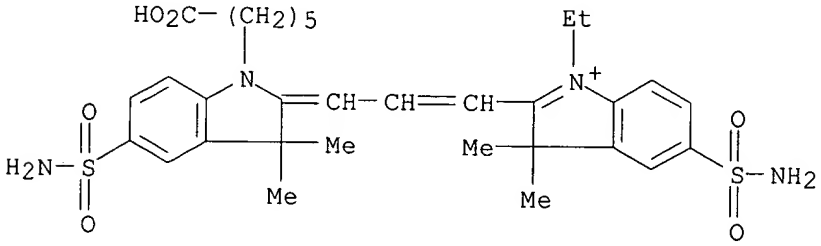
RN 366451-16-3 HCAPLUS
CN 3H-Indolium, 1-(5-carboxypentyl)-2-[5-(1-ethyl-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene)-1,3-pentadienyl]-3,3-dimethyl- (9CI) (CA INDEX NAME)



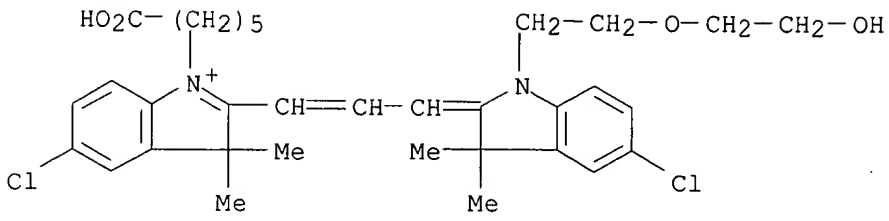
RN 366451-17-4 HCAPLUS
CN 3H-Indolium, 1-(5-carboxypentyl)-5-chloro-2-[5-[5-chloro-1,3-dihydro-1-[2-(2-hydroxyethoxy)ethyl]-3,3-dimethyl-2H-indol-2-ylidene]-1,3-pentadienyl]-3,3-dimethyl- (9CI) (CA INDEX NAME)



RN 366451-18-5 HCAPLUS
CN 3H-Indolium, 5-(aminosulfonyl)-2-[3-[5-(aminosulfonyl)-1-(5-carboxypentyl)-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1-ethyl-3,3-dimethyl- (9CI) (CA INDEX NAME)



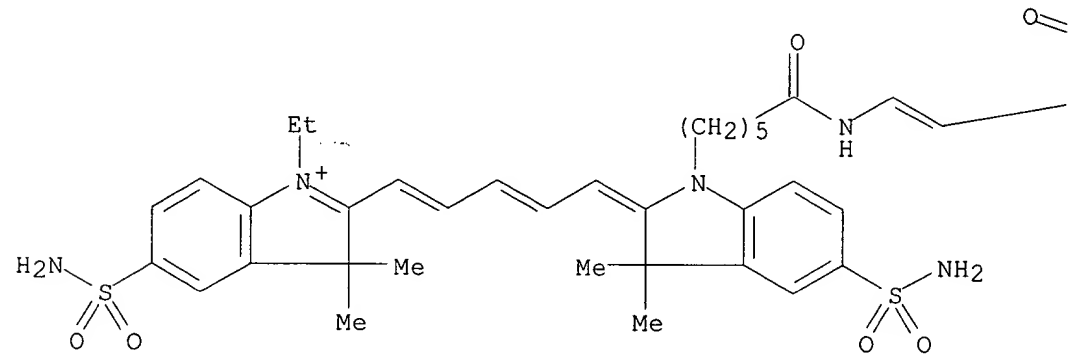
RN 366451-19-6 HCAPLUS
CN 3H-Indolium, 1-(5-carboxypentyl)-5-chloro-2-[3-[5-chloro-1,3-dihydro-1-[2-(2-hydroxyethoxy)ethyl]-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-3,3-dimethyl- (9CI) (CA INDEX NAME)



RN 366451-20-9 HCAPLUS
CN 3H-Indolium, 5-(aminosulfonyl)-2-[5-[5-(aminosulfonyl)-1-[6-[[2-[1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]-1,2,3,4-tetrahydro-2,4-dioxo-5-pyrimidinyl]ethenyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1,3-pentadienyl]-1-ethyl-3,3-dimethyl-, inner salt, trisodium salt (9CI) (CA INDEX NAME)

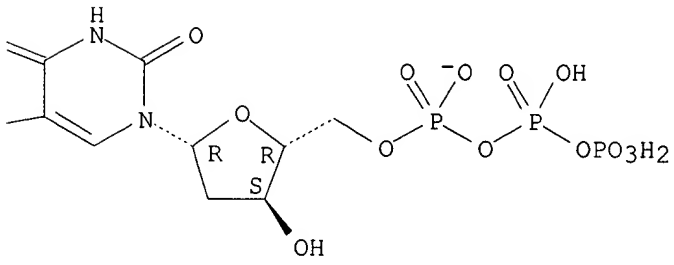
Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A



● 3 Na

PAGE 1-B

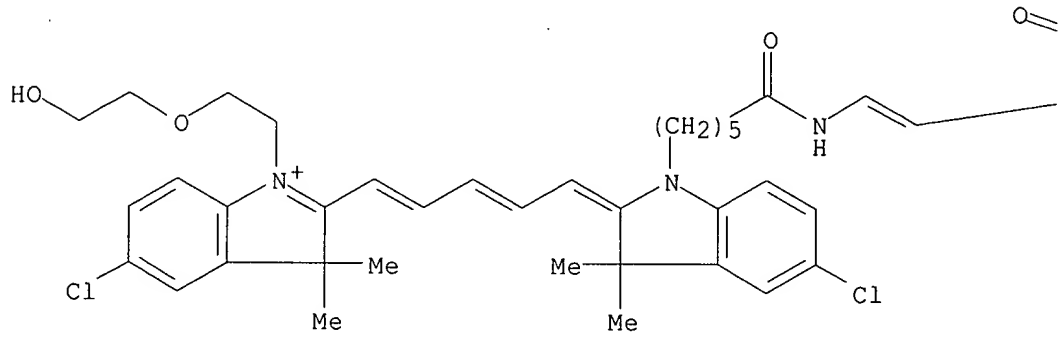


RN 366451-21-0 HCAPLUS

CN 3H-Indolium, 5-chloro-2-[5-[5-chloro-1-[6-[[2-[1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]-1,2,3,4-tetrahydro-2,4-dioxo-5-pyrimidinyl]ethenyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1,3-pentadienyl]-1-[2-(2-hydroxyethoxy)ethyl]-3,3-dimethyl-, inner salt, trisodium salt (9CI) (CA INDEX NAME)

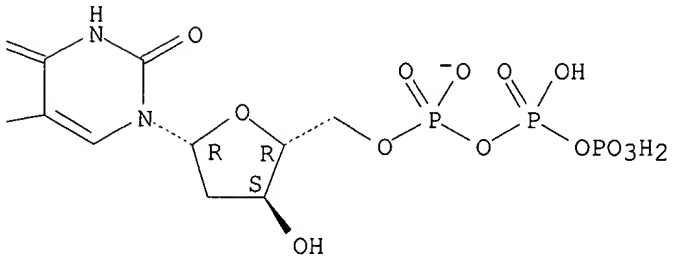
Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A



●3 Na

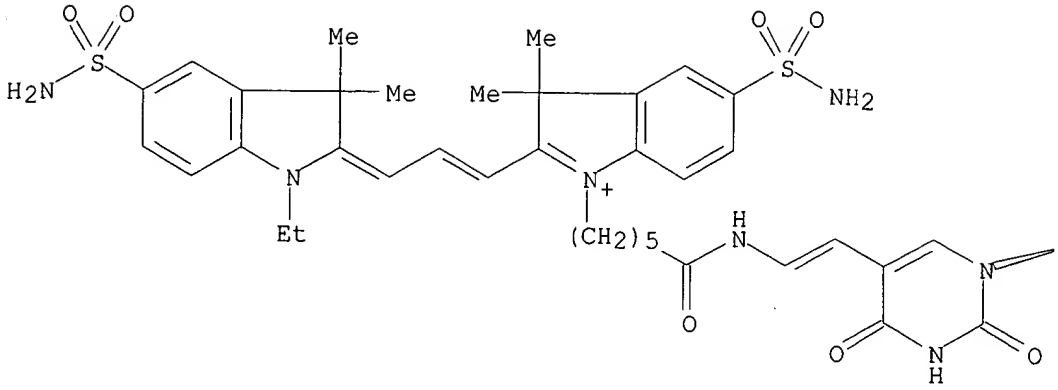
PAGE 1-B



RN 366451-22-1 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 5-[2-[[6-[5-(aminosulfonyl)-2-[3-[5-(aminosulfonyl)-1-ethyl-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-3,3-dimethyl-3H-indolio]-1-oxohexyl]amino]ethenyl]-2'-deoxy-, inner salt, trisodium salt (9CI) (CA INDEX NAME)

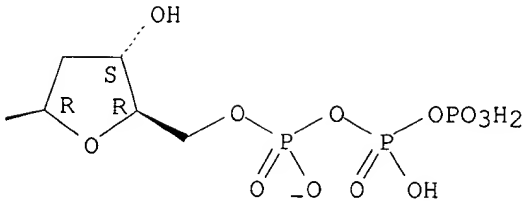
Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A



●3 Na

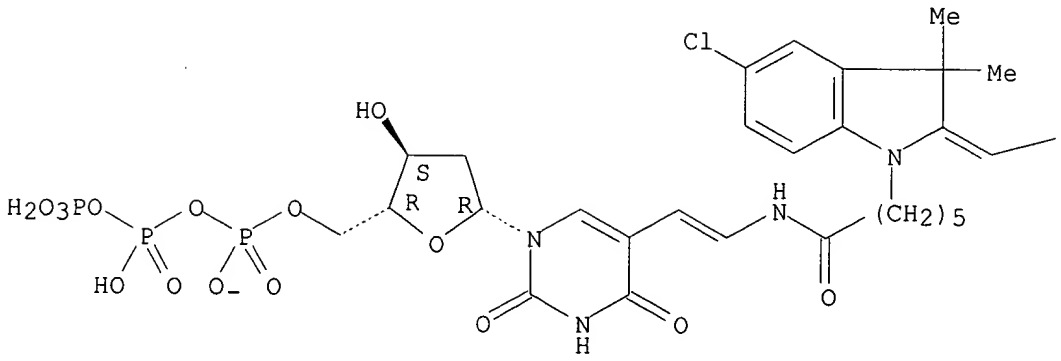
PAGE 1-B



RN 366451-23-2 HCAPLUS
CN 3H-Indolium, 5-chloro-2-[3-[5-chloro-1-[6-[[2-[1-[2-deoxy-5-O-[hydroxy[[hydroxy(phosphonooxy)phosphinyl]oxy]phosphinyl]-β-D-erythro-pentofuranosyl]-1,2,3,4-tetrahydro-2,4-dioxo-5-pyrimidinyl]ethenyl]amino]-6-oxohexyl]-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1-[2-(2-hydroxyethoxy)ethyl]-3,3-dimethyl-, inner salt, trisodium salt (9CI) (CA INDEX NAME)

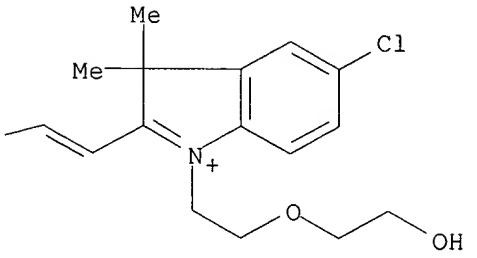
Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A



●3 Na

PAGE 1-B

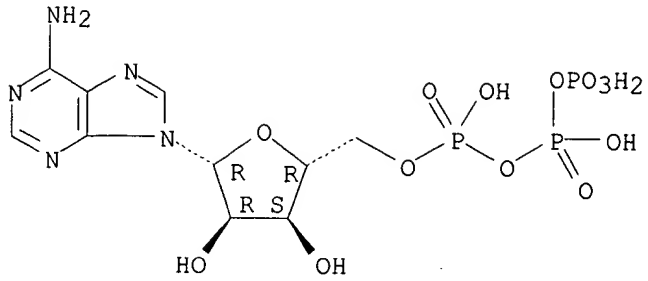


IT **56-65-5**, 5'-ATP, reactions **58-64-0**, 5'-ADP, reactions **58-97-9**, 5'-UMP, reactions **58-98-0**, 5'-UDP, reactions **61-19-8**, 5'-AMP, reactions **63-37-6**, CMP **63-38-7**, CDP **63-39-8**, 5'-UTP **65-47-4**, 5'-CTP **85-32-5**, 5'-GMP **86-01-1**, 5'-GTP **95-50-1**, 1, 2-Dichloro benzene **122-51-0**, Triethyl orthoformate **146-91-8**, 5'-GDP **365-07-1**, DTMP **365-08-2**, TTP **491-97-4**, TDP **628-89-7 1173-82-6**, DUTP **1173-82-6D**, DUTP, aminoaryl **1927-31-7**, DATP **2056-98-6**, DCTP **2564-35-4**, DGTP **3590-36-1 4224-70-8**, 6-Bromo hexanoic acid **14315-97-0 20309-92-6 25981-83-3 39923-67-6 39923-68-7**, 2-Methyl-ADP **42467-24-3**, 2-Methyl-ATP **52940-67-7 52988-98-4 76528-21-7 80677-38-9 112242-04-3 130536-69-5 327174-86-7 366451-24-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(fluorescent labeled nucleotide synthesis and application as probes and primers)

RN 56-65-5 HCAPLUS

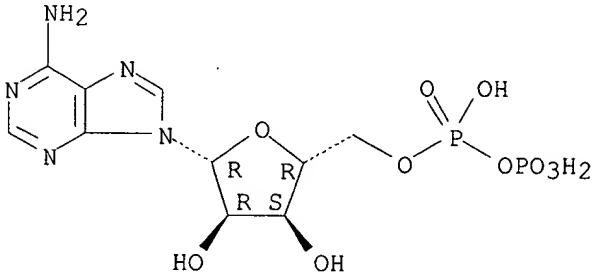
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



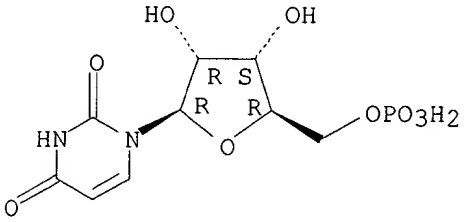
RN 58-64-0 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



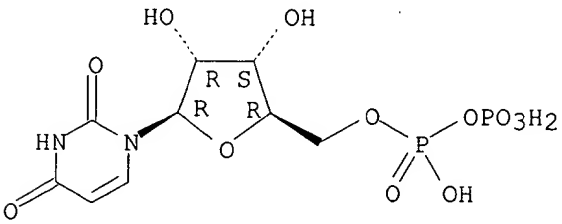
RN 58-97-9 HCAPLUS
CN 5'-Uridylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



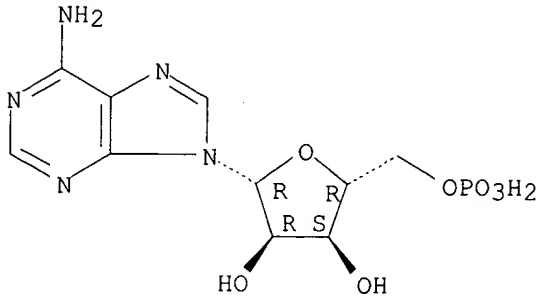
RN 58-98-0 HCAPLUS
CN Uridine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



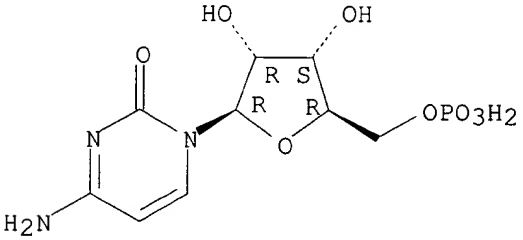
RN 61-19-8 HCAPLUS
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



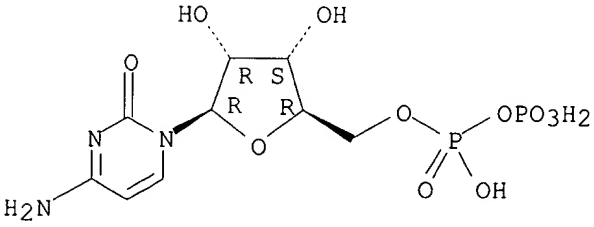
RN 63-37-6 HCAPLUS
CN 5'-Cytidylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



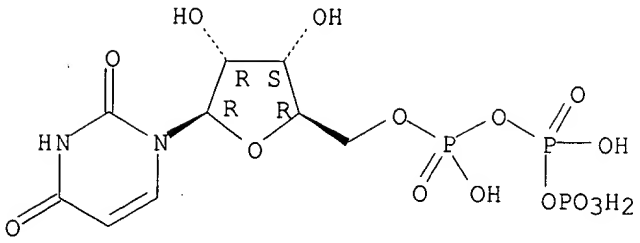
RN 63-38-7 HCAPLUS
CN Cytidine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



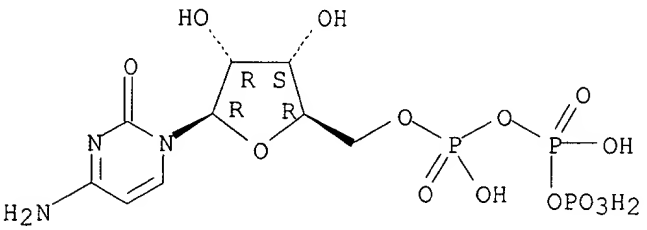
RN 63-39-8 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 65-47-4 HCAPLUS
CN Cytidine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 85-32-5 HCAPLUS
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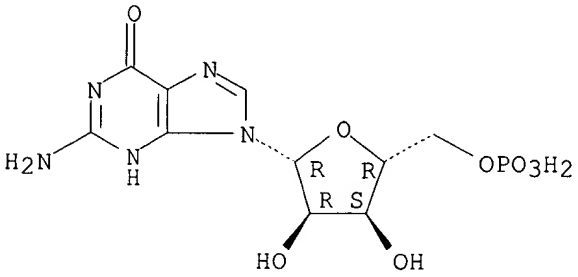
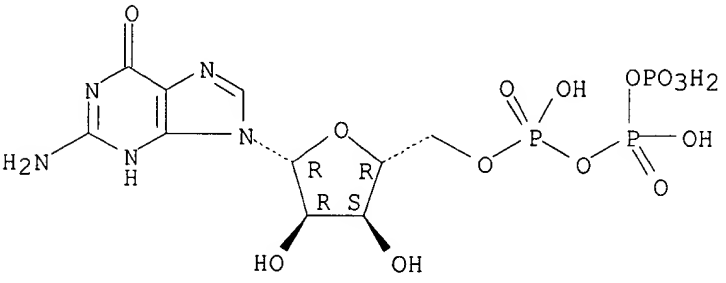
Absolute stereochemistry.

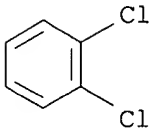


RN 86-01-1 HCAPLUS
CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

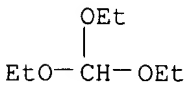
Absolute stereochemistry.



RN 95-50-1 HCAPLUS
CN Benzene, 1,2-dichloro- (9CI) (CA INDEX NAME)

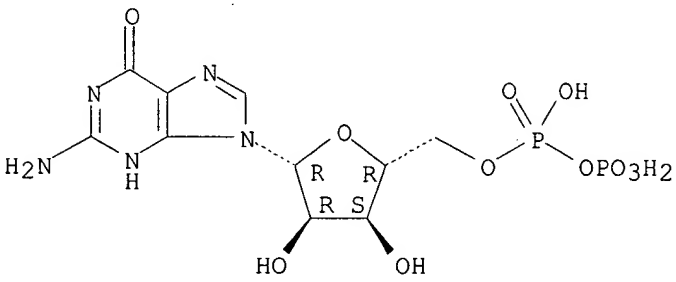


RN 122-51-0 HCAPLUS
CN Ethane, 1,1',1''-[methylidynetris(oxy)]tris- (9CI) (CA INDEX NAME)



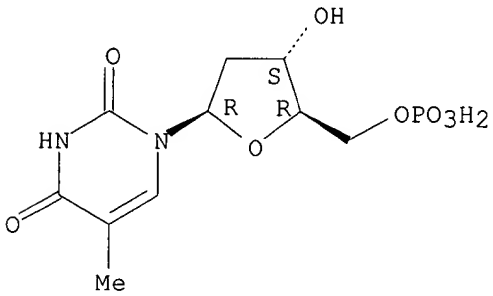
RN 146-91-8 HCAPLUS
CN Guanosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



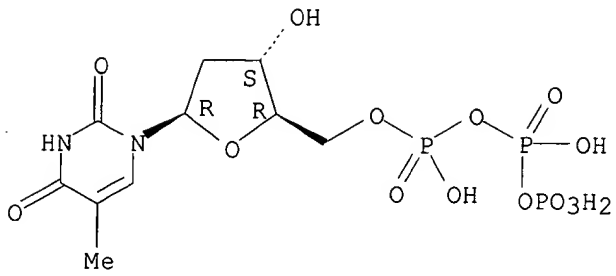
RN 365-07-1 HCAPLUS
CN 5'-Thymidylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



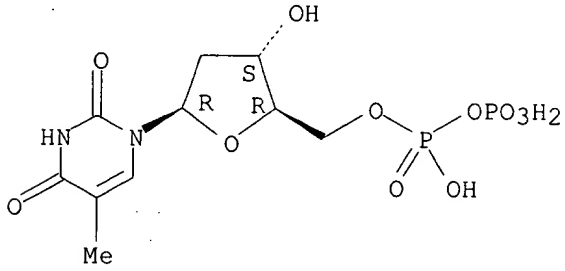
RN 365-08-2 HCAPLUS
CN Thymidine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

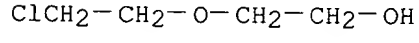


RN 491-97-4 HCAPLUS
CN Thymidine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

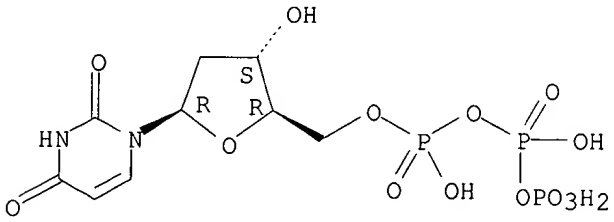


RN 628-89-7 HCAPLUS
CN Ethanol, 2-(2-chloroethoxy)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



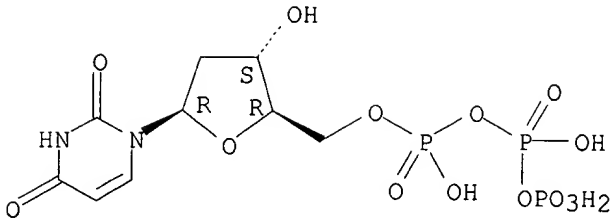
RN 1173-82-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



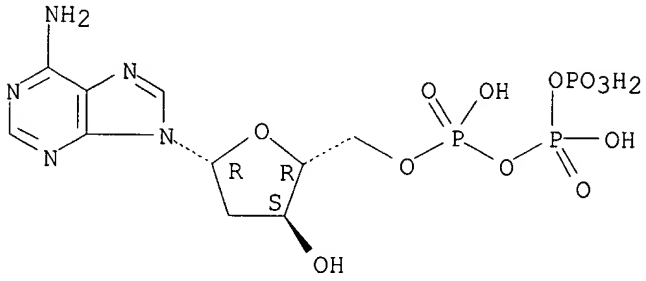
RN 1173-82-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



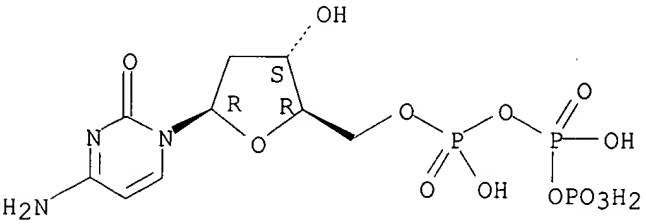
RN 1927-31-7 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



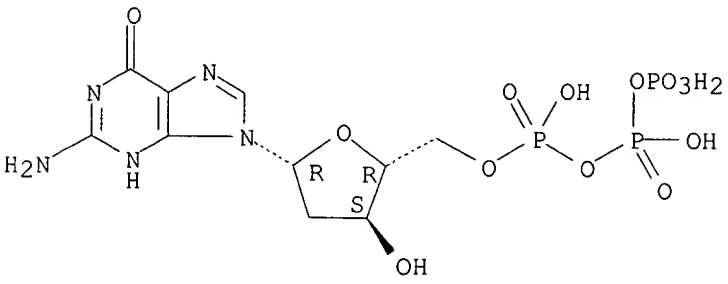
RN 2056-98-6 HCAPLUS
CN Cytidine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

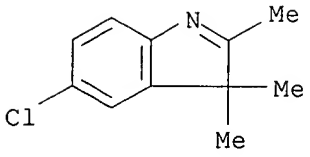
Absolute stereochemistry.



RN 2564-35-4 HCAPLUS
CN Guanosine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

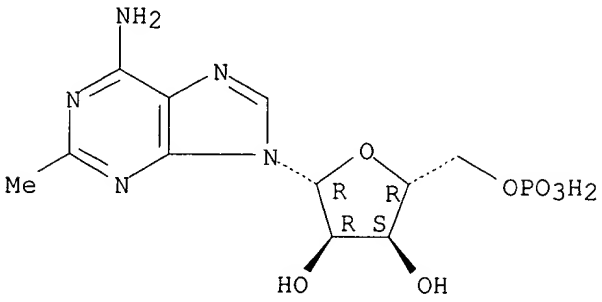
Absolute stereochemistry.





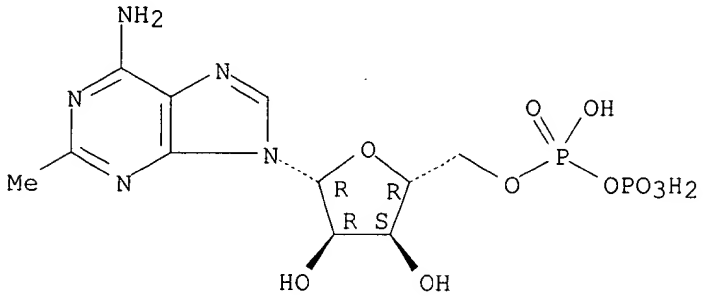
RN 39923-67-6 HCAPLUS
CN 5'-Adenylic acid, 2-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



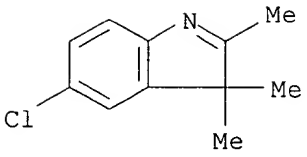
RN 39923-68-7 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), 2-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



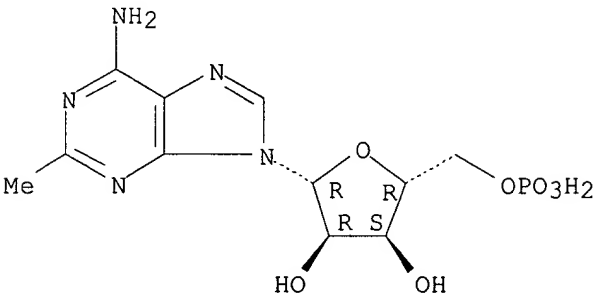
RN 42467-24-3 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate), 2-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



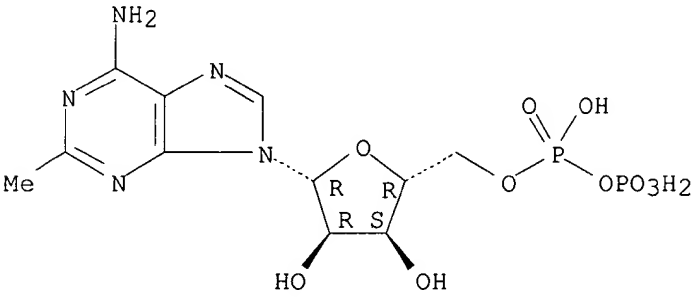
RN 39923-67-6 HCAPLUS
CN 5'-Adenylic acid, 2-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



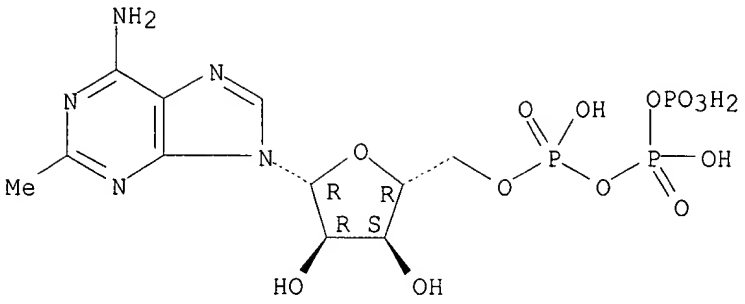
RN 39923-68-7 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), 2-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



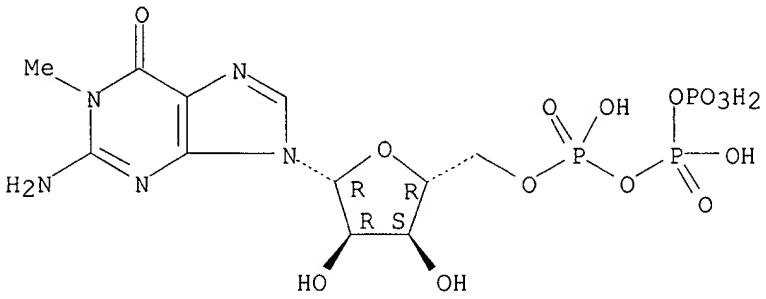
RN 42467-24-3 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate), 2-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



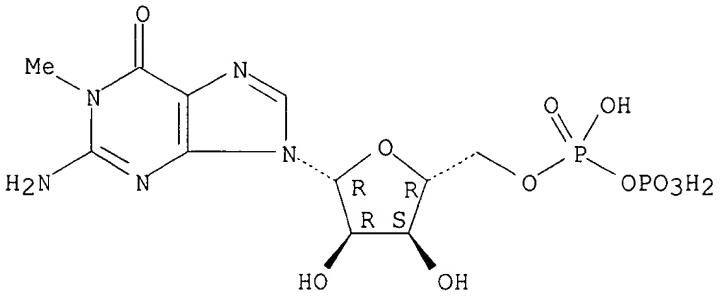
RN 52940-67-7 HCAPLUS
CN Guanosine 5'-(tetrahydrogen triphosphate), 1-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



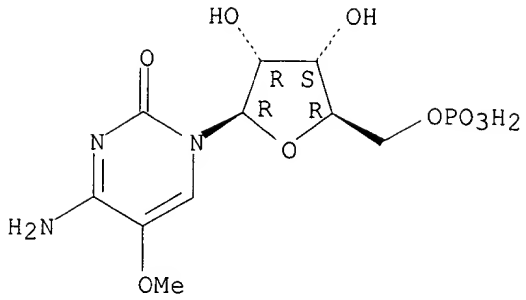
RN 52988-98-4 HCAPLUS
CN Guanosine 5'-(trihydrogen diphosphate), 1-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



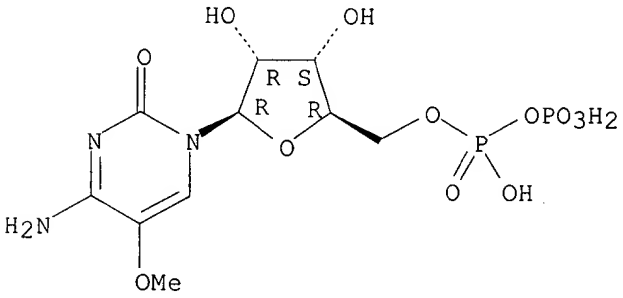
RN 76528-21-7 HCAPLUS
CN 5'-Cytidylic acid, 5-methoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



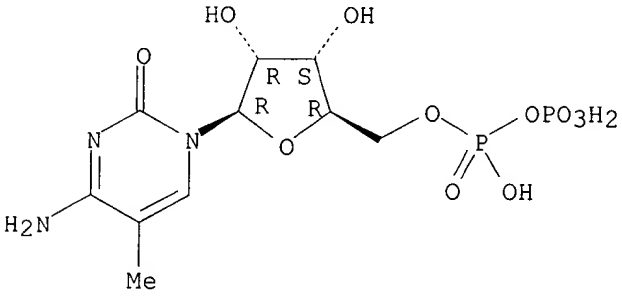
RN 80677-38-9 HCAPLUS
CN Cytidine 5'-(trihydrogen diphosphate), 5-methoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

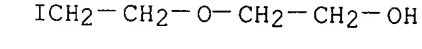


RN 112242-04-3 HCAPLUS
CN Cytidine 5'-(trihydrogen diphosphate), 5-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

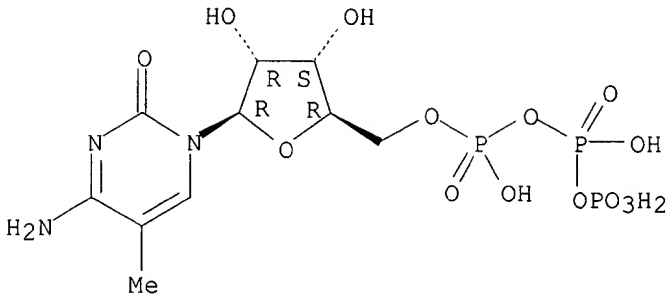


RN 130536-69-5 HCAPLUS
CN Ethanol, 2-(2-iodoethoxy)- (9CI) (CA INDEX NAME)



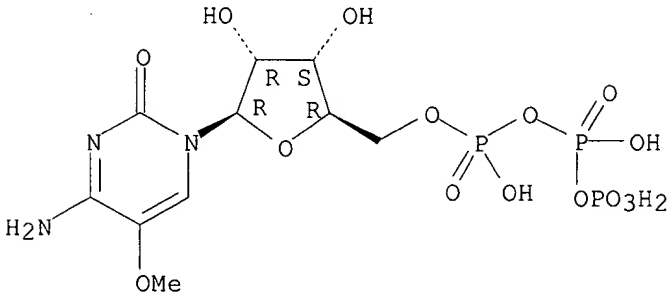
RN 327174-86-7 HCAPLUS
CN Cytidine 5'-(tetrahydrogen triphosphate), 5-methyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

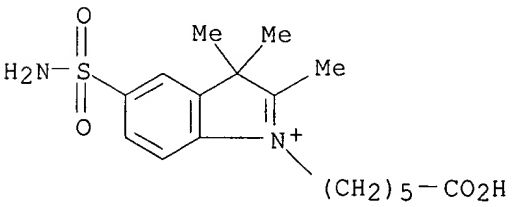


RN 366451-24-3 HCAPLUS
CN Cytidine 5'-(tetrahydrogen triphosphate), 5-methoxy- (9CI) (CA INDEX NAME)

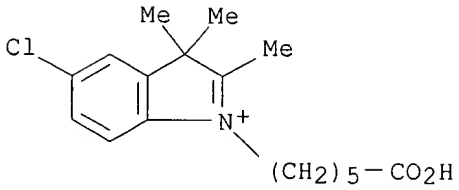
Absolute stereochemistry.



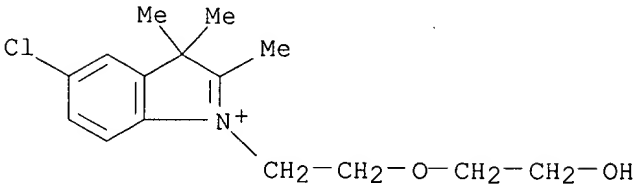
IT **366451-26-5DP**, bromide **366451-27-6DP**, bromide
366451-28-7DP, bromide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(fluorescent labeled nucleotide synthesis and application as probes and primers)
RN 366451-26-5 HCAPLUS
CN 3H-Indolium, 5-(aminosulfonyl)-1-(5-carboxypentyl)-2,3,3-trimethyl- (9CI) (CA INDEX NAME)



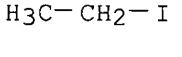
RN 366451-27-6 HCAPLUS
CN 3H-Indolium, 1-(5-carboxypentyl)-5-chloro-2,3,3-trimethyl- (9CI) (CA INDEX NAME)



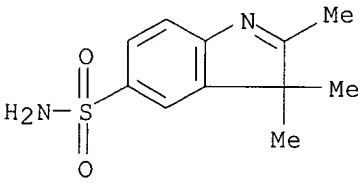
RN 366451-28-7 HCAPLUS
CN 3H-Indolium, 5-chloro-1-[2-(2-hydroxyethoxy)ethyl]-2,3,3-trimethyl- (9CI) (CA INDEX NAME)



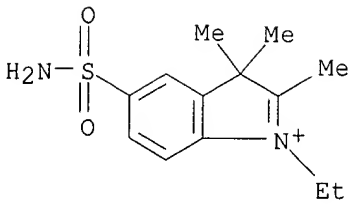
IT **75-03-6**, Ethyl iodide **62306-05-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; fluorescent labeled nucleotide synthesis and application as probes and primers)
RN 75-03-6 HCAPLUS
CN Ethane, iodo- (8CI, 9CI) (CA INDEX NAME)



RN 62306-05-2 HCAPLUS
CN 3H-Indole-5-sulfonamide, 2,3,3-trimethyl- (9CI) (CA INDEX NAME)



IT **366451-25-4DP**, iodide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reactant; fluorescent labeled nucleotide synthesis and application as probes and primers)
RN 366451-25-4 HCAPLUS
CN 3H-Indolium, 5-(aminosulfonyl)-1-ethyl-2,3,3-trimethyl- (9CI) (CA INDEX NAME)



L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2002-151035 [20] WPIX
DNN N2002-114649 DNC C2002-047205
TI New fluorescent nucleotide, useful for labelling nucleic acids.
DC B04 D16 S03
IN INOMATA, H; KOJIMA, M; SESHIMOTO, O; SHINOKI, H; SUDO, Y
PA (FUJF) FUJI PHOTO FILM CO LTD; (INOM-I) INOMATA H; (KOJI-I) KOJIMA M; (SESH-I) SESHIMOTO O; (SHIN-I) SHINOKI H; (SUDO-I) SUDO Y
CYC 28
PI JP 2001288197 A 20011016 (200220)* 14 C07H019-10
EP 1152008 A2 20011107 (200220) EN C07H019-06
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR
US 2002064782 A1 20020530 (200240) C12Q001-68
EP 1152008 B1 20050209 (200512) EN C07H019-06
R: DE GB
DE 60108799 E 20050317 (200522) C07H019-06
ADT JP 2001288197 A JP 2000-107675 20000410; EP 1152008 A2 EP 2001-107864 20010410; US 2002064782 A1 **US 2001-829467 20010409**; EP 1152008 B1 EP 2001-107864 20010410; DE 60108799 E DE 2001-00108799 20010410, EP 2001-107864 20010410
FDT DE 60108799 E Based on EP 1152008
PRAI JP 2000-107675 20000410
IC ICM C07H019-06; C07H019-10; C12Q001-68
ICS C07H019-16; C07H019-20; C07H021-00; C07H021-04; C09K011-06; C12N015-09; C12P019-34; G01N033-53; G01N033-58
ICA C07D209-08; C07D209-30; C07D403-06; C07D403-14
AB JP2001288197 A UPAB: 20020402
NOVELTY - A new fluorescent nucleotide (I) of the formula A-B-C.

DETAILED DESCRIPTION - A fluorescent nucleotide of the formula A-B-C (I), where:

A is a residue of natural or synthetic nucleotide, oligonucleotide or polynucleotide or their derivatives and combines to B with the base portion in the residue, B is a divalent linkage or single bond and C is a monovalent group derived from a fluorochrome having water-soluble group other than sulfonate group, phosphate group and carboxylic acid group in the molecule or a monovalent group derived from a fluorochrome having 0 to 1 sulfonate or phosphate group in the molecule.

INDEPENDENT CLAIMS are also included for:

(1) a method for the preparation of a fluorescence-labelled nucleic acid in which a nucleic acid-synthesizing reaction is carried out by using a nucleic acid-synthesizing enzyme;

(2) a template nucleic acid and the above fluorescent nucleotide, a nucleic acid probe or primer labelled by the above fluorescent nucleotide, a reagent for detecting nucleic acid or a diagnostic agent consisting of the above fluorescent nucleotide; and

(3) a kit for detecting nucleic acid containing:

(i) the above fluorescent nucleotide;

(ii) nucleic acid-synthesizing enzyme; and

(iii) a buffer solution.

USE - The fluorescent nucleotide is useful for labelling nucleic acids.

Dwg.0/2

ABEX JP 2001288197 AUPTX: 20020402
EXAMPLE - 1 ml acetonitrile and 2 ml 0.1 M MES buffer were added to 5.75 mg of the compound of the formula (III) to dissolve it, 2.20 mg WSC hydrochloride and 2.52 mg Sulfo-NHS were added to it and stirred at room temperature for 30 minutes. 200 microliters 0.1 M MES containing 2.2 mg

aminoallyl-deoxyuridine triphosphate was added to it and reacted at room temperature overnight. 100 microliters 1 M Tris buffer was added and the mixture was adsorbed on an ODS silica column and eluted by 30 % aqueous methanol. The eluate was concentrated and purified by a medium pressure preparative chromatography to give the compound of the formula (II).

KW [1] 93605-0-0-0 CL NEW USE; 105730-0-0-0 CL NEW USE
FS CPI EPI
FA AB; DCN
MC CPI: B04-E01; B04-E05; B04-L01; B11-C08; B11-C08E; B11-C08E5; B12-K04F; D05-H09; D05-H12D; D05-H12D1; D05-H18
EPI: S03-E14H
CMC UPB 20020402
M1 *01* M423 M424 M710 M740 M781 M905 N102 N134 N135 P831 Q233 Q505
DCN: RA00NS-D; RA00NS-N; RA00NS-U
M1 *02* M423 M424 M710 M740 M781 M905 N102 N134 N135 P831 Q233 Q505
DCN: RA012P-D; RA012P-N; RA012P-U
M6 *03* M905 P831 Q233 Q505 R515 R521 R614 R624 R625 R627 R639

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=> d his ful

     (FILE 'HOME' ENTERED AT 14:49:06 ON 24 MAR 2006)

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L1            1 SEA ABB=ON  PLU=ON  US2001-829467/AP
                SEL RN

     FILE 'REGISTRY' ENTERED AT 14:49:46 ON 24 MAR 2006
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                122-51-0/BI OR 130536-69-5/BI OR 14315-97-0/BI OR 146-91-8/BI
                OR 1927-31-7/BI OR 20309-92-6/BI OR 2056-98-6/BI OR 23065-05-6/
                BI OR 2564-35-4/BI OR 25981-83-3/BI OR 327174-86-7/BI OR
                3590-36-1/BI OR 365-07-1/BI OR 365-08-2/BI OR 366451-16-3/BI
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                366451-20-9/BI OR 366451-21-0/BI OR 366451-22-1/BI OR 366451-23
                -2/BI OR 366451-24-3/BI OR 366451-25-4/BI OR 366451-26-5/BI OR
                366451-27-6/BI OR 366451-28-7/BI OR 39923-67-6/BI OR 39923-68-7
                /BI OR 4224-70-8/BI OR 42467-24-3/BI OR 491-97-4/BI OR
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                628-89-7/BI OR 63-37-6/BI OR 63-38-7/BI OR 63-39-8/BI OR
                65-47-4/BI OR 75-03-6/BI OR 76528-21-7/BI OR 80677-38-9/BI OR
                85-32-5/BI OR 86-01-1/BI OR 95-50-1/BI)

     FILE 'HCAPLUS' ENTERED AT 14:49:59 ON 24 MAR 2006
L3            1 SEA ABB=ON  PLU=ON  L1 AND L2
                D IALL HITSTR

     FILE 'WPIX' ENTERED AT 14:50:50 ON 24 MAR 2006
                E US2001-829467/AP,PRN
L4            1 SEA ABB=ON  PLU=ON  US2001-829467/AP
                D MAX

     FILE 'HCAPLUS' ENTERED AT 15:00:32 ON 24 MAR 2006
                E FLUORESCENT DYE/CT
                E E4+ALL
L5            9 SEA ABB=ON  PLU=ON  "FLUORESCENT DYES"+PFT,NT/CT(L)?SULFONAMID?

L6            0 SEA ABB=ON  PLU=ON  L5 AND L1

     FILE 'REGISTRY' ENTERED AT 15:01:57 ON 24 MAR 2006
                E ?FLUOR? AND ?DYE?
L7           18 SEA ABB=ON  PLU=ON  ?FLUOR? AND ?DYE?

     FILE 'STNGUIDE' ENTERED AT 15:02:59 ON 24 MAR 2006

     FILE 'REGISTRY' ENTERED AT 15:08:01 ON 24 MAR 2006
L8              STR
L9           35 SEA SSS SAM L8
L10             STR L8
L11          20 SEA SSS SAM L10
L12         735 SEA SSS FUL L10
L13           3 SEA ABB=ON  PLU=ON  L12 AND L2
                D SCA
L14           6 SEA ABB=ON  PLU=ON  L12 AND P/ELS
                D SCA
L15             STR
```

```
L16             STR L15
L17           8 SEA SUB=L12 SSS SAM L16
L18         253 SEA SUB=L12 SSS FUL L16
L19             STR L16
L20         227 SEA SUB=L12 SSS FUL L19
L21             STR L19
L22           6 SEA SUB=L12 SSS SAM L21
L23         204 SEA SUB=L12 SSS FUL L21
L24          49 SEA ABB=ON  PLU=ON  L18 NOT L23
L25             STR L21
L26         213 SEA SUB=L12 SSS FUL L25
L27          40 SEA ABB=ON  PLU=ON  L18 NOT L26
L28           0 SEA ABB=ON  PLU=ON  L26 AND L27
L29         522 SEA ABB=ON  PLU=ON  L12 NOT L26
L30           3 SEA ABB=ON  PLU=ON  L29 AND L2
                D SCA
L31           0 SEA ABB=ON  PLU=ON  L26 AND L2
                D QUE L26
L32             STR L25
                D QUE
L33             STR L32
L34             STR L33
L35           5 SEA SUB=L12 SSS SAM L34
L36         149 SEA SUB=L12 SSS FUL L34
L37           0 SEA ABB=ON  PLU=ON  L2 AND L36
L38         516 SEA ABB=ON  PLU=ON  L12 NOT (L26 OR L36 OR L14)
L39           1 SEA ABB=ON  PLU=ON  L2 AND L38
                D SCA

    FILE 'HCAPLUS' ENTERED AT 15:31:40 ON 24 MAR 2006
L40         164 SEA ABB=ON  PLU=ON  L38
L41           2 SEA ABB=ON  PLU=ON  L40 AND ?NUCLEOT?
                D SCA
                E NUCLEOTIDES/CT
L42        5565 SEA ABB=ON  PLU=ON  NUCLEOTIDES+PFT,NT/CT(L)?FLUOR?
L43      312511 SEA ABB=ON  PLU=ON  NUCLEOTIDES+PFT,NT/CT
L44       70713 SEA ABB=ON  PLU=ON  OLIGONUCLEOTIDES+PFT,NT/CT
L45       16053 SEA ABB=ON  PLU=ON  POLYNUCLEOTIDES+PFT,NT/CT
L46      738042 SEA ABB=ON  PLU=ON  (L43 OR L44 OR L45) OR ?NUCLEOTID?
L47           2 SEA ABB=ON  PLU=ON  L46 AND L40
L48        2207 SEA ABB=ON  PLU=ON  OLIGONUCLEOTIDES+PFT,NT/CT(L)?FLUOR?
L49         411 SEA ABB=ON  PLU=ON  POLYNUCLEOTIDES+PFT,NT/CT(L)?FLUOR?
L50        5565 SEA ABB=ON  PLU=ON  L42 OR L48 OR L49
                E FLUORESCENT DYES/CT
L51        5406 SEA ABB=ON  PLU=ON  FLUORESCENT DYES+PFT,NT/CT
                E CYANINE DYES/CT
L52       10107 SEA ABB=ON  PLU=ON  CYANINE DYES+PFT,NT/CT
L53         303 SEA ABB=ON  PLU=ON  (L38 OR L51 OR L52) AND L50
                D IBIB ABS HITIND HITSTR
L54           2 SEA ABB=ON  PLU=ON  L38 AND L50
L55           5 SEA ABB=ON  PLU=ON  L50 AND (L51 OR L52) AND ?SULFONAMID?
L56           7 SEA ABB=ON  PLU=ON  L47 OR L54 OR L55


    FILE HOME

    FILE HCAPLUS

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FILE COVERS 1907 - 24 Mar 2006 VOL 144 ISS 14
FILE LAST UPDATED: 23 Mar 2006 (20060323/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE REGISTRY
Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 22 MAR 2006 HIGHEST RN 877759-05-2
DICTIONARY FILE UPDATES: 22 MAR 2006 HIGHEST RN 877759-05-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE WPIX
FILE LAST UPDATED: 23 MAR 2006 <20060323/UP>
MOST RECENT DERWENT UPDATE: 200620 <200620/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

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      >>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
      http://scientific.thomson.com/support/patents/coverage/latestupdates/

      >>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
          GUIDES, PLEASE VISIT:
      http://scientific.thomson.com/support/products/dwpi/

      >>> FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT
          DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX
          FIRST VIEW - FILE WPIFV.
          FOR FURTHER DETAILS:
      http://scientific.thomson.com/support/products/dwpifv/

      >>> THE CPI AND EPI MANUAL CODES WILL BE REVISED FROM UPDATE 200601.
          PLEASE CHECK:
      http://scientific.thomson.com/support/patents/dwpiref/reftools/classificat

      >>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
      http://www.stn-international.de/stndatabases/details/ipc_reform.html  and
      http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf <<<

      FILE STNGUIDE
      FILE CONTAINS CURRENT INFORMATION.
      LAST RELOADED: Mar 17, 2006 (20060317/UP).

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 15:41:28 ON 24 MAR 2006
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FILE COVERS 1907 - 24 Mar 2006  VOL 144 ISS 14
FILE LAST UPDATED: 23 Mar 2006  (20060323/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> d que stat
L10             STR
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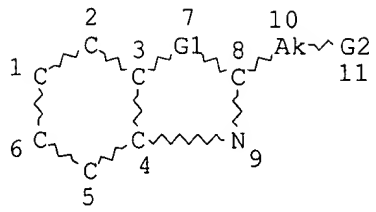

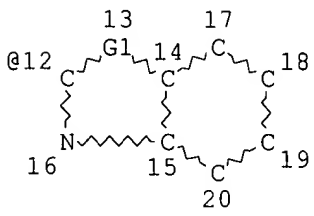

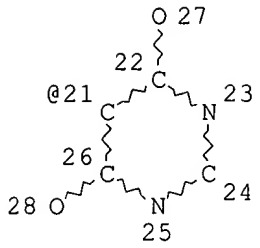

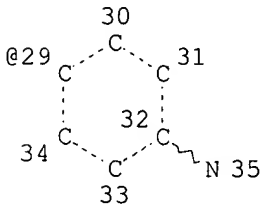

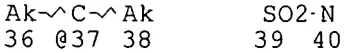

VAR G1=O/S/37
VAR G2=12/21/29
NODE ATTRIBUTES:
NSPEC IS RC AT 35
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 40

STEREO ATTRIBUTES: NONE
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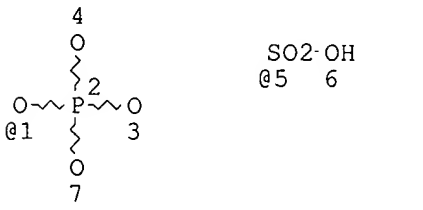
L14 6 SEA FILE=REGISTRY ABB=ON PLU=ON L12 AND P/ELS
L25 STR



VAR G1=5/1
REP G2=(0-20) A
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DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
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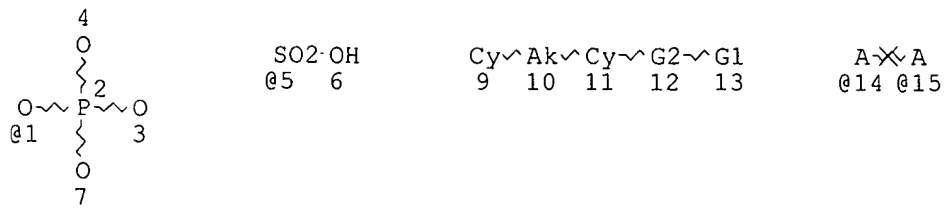
L34 STR

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REP G2=(0-20) 14-11 15-13
NODE ATTRIBUTES:
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GGCAT   IS UNS  AT  10
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  14

STEREO ATTRIBUTES: NONE
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L40         164 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38
L42        5565 SEA FILE=HCAPLUS ABB=ON  PLU=ON  NUCLEOTIDES+PFT,NT/CT(L)?FLUOR
                ?
L43      312511 SEA FILE=HCAPLUS ABB=ON  PLU=ON  NUCLEOTIDES+PFT,NT/CT
L44       70713 SEA FILE=HCAPLUS ABB=ON  PLU=ON  OLIGONUCLEOTIDES+PFT,NT/CT
L45       16053 SEA FILE=HCAPLUS ABB=ON  PLU=ON  POLYNUCLEOTIDES+PFT,NT/CT
L46      738042 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L43 OR L44 OR L45) OR
                ?NUCLEOTID?
L47           2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 AND L40
L48        2207 SEA FILE=HCAPLUS ABB=ON  PLU=ON  OLIGONUCLEOTIDES+PFT,NT/CT(L)?
                FLUOR?
L49         411 SEA FILE=HCAPLUS ABB=ON  PLU=ON  POLYNUCLEOTIDES+PFT,NT/CT(L)?F
                LUOR?
L50        5565 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L42 OR L48 OR L49
L51        5406 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FLUORESCENT DYES+PFT,NT/CT
L52       10107 SEA FILE=HCAPLUS ABB=ON  PLU=ON  CYANINE DYES+PFT,NT/CT
L54           2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L50
L55           5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L50 AND (L51 OR L52) AND
                ?SULFONAMID?
L56           7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L47 OR L54 OR L55


=> d l56 ibib abs hitind hitstr 1-7

L56  ANSWER 1 OF 7  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:610021  HCAPLUS
DOCUMENT NUMBER:          141:153045
TITLE:                    Fluorescent assays for screening for protein kinase
                          inhibitors applicable in cancer treatment and
                          diagnosis
INVENTOR(S):              Lawrence, David S.
PATENT ASSIGNEE(S):       Albert Einstein College of Medicine of Yeshiva
                          University, USA
SOURCE:                   PCT Int. Appl., 188 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
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LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2004062475	A2	20040729	WO 2004-US480		20040109
WO 2004062475	A3	20050901			
W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GH, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ					
US 2005054024	A1	20050310	US 2004-755086		20040109
PRIORITY APPLN. INFO.:			US 2003-439359P	P	20030110
			US 2003-505097P	P	20030922

OTHER SOURCE(S): MARPAT 141:153045

AB This invention provides fluorescently-labeled peptide substrates for protein kinases; methods using the substrates for identifying compds. that inhibit protein kinases, for determining if particular protein kinases are active in cells, for diagnosing diseases, and for preparing compns.; and compns. comprising the substrates. Several schemes for the synthesis of protein kinase C fluorescently-labeled peptide substrates, adaptable to the preparation of large peptide libraries, are provided. In particular embodiments, a library of fluorescently labeled protein kinase C (PKC) peptide substrates was prepared to identify a phosphorylation-induced reporter of protein kinase activity. The lead PKC substrate displays a 2.5-fold change in fluorescence intensity upon phosphorylation. PKC activity can also be detected in cell lysates containing the activated PKCs and living cells. Immunodepletion of conventional PKCs from the cell lysate eliminates the fluorescence response, suggesting that this peptide substrate is selectively phosphorylated by PKCα, β, and γ. Finally, living cells microinjected with the peptide substrate exhibit a 2-fold increase in fluorescence intensity upon exposure to a PKC activator. Thus this peptide based protein kinase biosensors is useful in monitoring the temporal and spatial dynamics of PKC activity in living cells, and applicable in cancer treatment and diagnosis.

IC ICM A61B
CC 7-3 (Enzymes)
Section cross-reference(s): 1, 9, 13
IT **Fluorescent dyes**
(Oregon Green conjugated to PKC peptide substrate; fluorescent assays for screening for protein kinase inhibitors applicable in cancer treatment and diagnosis)
IT Alexa
Fluorescent dyes
(conjugated to PKC peptide substrate; fluorescent assays for screening for protein kinase inhibitors applicable in cancer treatment and diagnosis)
IT **Fluorescent dyes**
(dansyl, conjugated to PKC peptide substrate; fluorescent assays for screening for protein kinase inhibitors applicable in cancer treatment and diagnosis)
IT Amides, biological studies
Amines, biological studies
Esters, biological studies
Ethers, biological studies

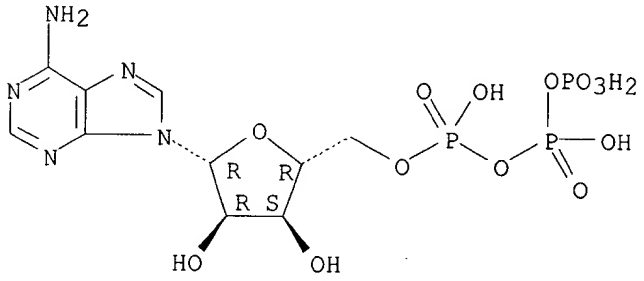
Sulfonamides
Thioethers
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(linker, PKC peptide substrate containing; fluorescent assays for screening for protein kinase inhibitors applicable in cancer treatment and diagnosis)

IT **56-65-5**, 5'-ATP, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(used in protein kinase assay; **fluorescent** assays for screening for protein kinase inhibitors applicable in cancer treatment and diagnosis)

IT **56-65-5**, 5'-ATP, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(used in protein kinase assay; **fluorescent** assays for screening for protein kinase inhibitors applicable in cancer treatment and diagnosis)

RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



L56 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:753071 HCAPLUS
DOCUMENT NUMBER: 135:303873
TITLE: Fluorescent labeled **nucleotides**, synthesis and application as probes and primers
INVENTOR(S): Shinoki, Hiroshi; Inomata, Hiroko; Kojima, Masayoshi; Sudo, Yukio; Seshimoto, Osamu
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001288197	A2	20011016	JP 2000-107675	20000410
US 2002064782	A1	20020530	US 2001-829467	20010409
EP 1152008	A2	20011107	EP 2001-107864	20010410
EP 1152008	A3	20020320		
EP 1152008	B1	20050209		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.: JP 2000-107675 A 20000410
OTHER SOURCE(S): MARPAT 135:303873

AB The present invention provides a fluorescent substance which is represented by a formula: A-B-C wherein A is a residue of natural or synthetic **nucleotide, oligonucleotide, polynucleotide**, or derivative thereof, and binds to B at a base moiety in said residue; B is a divalent linking group or a single bond; and C is a derivative of fluorescent dye having 0 or 1 sulfonate or phosphate moiety. Fluorescent dye is cyanine, melocyanine, or styryl. Preferably A is AMP, ADP, ATP, GMP, GDP, GTP, CMP, CDP, CTP, UMP, UDP, UTP, TMP, TDP, TTP, 2-Me-AMP, 2-Me-ADP, 2-Me-ATP, 1-Me-GMP, 1-Me-GDP, 1-Me-GTP, 5-Me-CMP, 5-Me-CDP, 5-Me-CTP, 5-MeO-CMP, 5-MeO-CDP, 5-MeO-CTP. B is preferably -CH2-, -CH=CH-, triple bond, -CO-, -O-, -S-, -NH-, or aminoaryl. Synthesis of labeled nucleic acids using the **nucleotides** via reverse transcription, terminal transferase reaction, random prime method, PCR, or nick translation, is claimed. The fluorescent substance of the present invention is useful as label for nucleic acids, reagent for detecting nucleic acids, or diagnostic reagent. Kits for nucleic acid detection are claimed. Synthesis of 8 indolenine cyanine compds. and conjugation with dUTP, and use for DNA probe preparation, are described.

IC ICM C07H019-10
ICS C07H019-20; C07H021-00; C09K011-06; C12N015-09; C12Q001-68; G01N033-58; C07D209-08; C07D209-30; C07D403-06; C07D403-14

CC 28-1 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 3, 9

ST fluorescent labeled **nucleotide** synthesis probe primer; cyanine melocyanine styryl **nucleotide** synthesis probe primer

IT Diagnosis
(agents; fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT Phosphates, biological studies
Sulfonates
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(dye containing; fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT Cyanine dyes
Fluorescent dyes
Test kits
(fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT **Nucleotides, preparation**
Oligonucleotides
Polynucleotides
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**fluorescent** labeled **nucleotide** synthesis and application as probes and primers)

IT Nucleic acid amplification (method)
(terminal transferase reaction, use in labeled nucleic acid synthesis; fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT PCR (polymerase chain reaction)
Reverse transcription
(use in labeled nucleic acid synthesis; fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT 23065-05-6, Styryl
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT 366451-16-3P 366451-17-4P **366451-18-5P** 366451-19-6P
366451-20-9P 366451-21-0P 366451-22-1P 366451-23-2P
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT **56-65-5**, 5'-ATP, reactions **58-64-0**, 5'-ADP, reactions
58-97-9, 5'-UMP, reactions **58-98-0**, 5'-UDP, reactions
61-19-8, 5'-AMP, reactions **63-37-6**, CMP **63-38-7**
, CDP **63-39-8**, 5'-UTP **65-47-4**, 5'-CTP **85-32-5**
, 5'-GMP **86-01-1**, 5'-GTP 95-50-1, 1, 2-Dichloro benzene
122-51-0, Triethyl orthoformate **146-91-8**, 5'-GDP
365-07-1, DTMP **365-08-2**, TTP 491-97-4, TDP 628-89-7
1173-82-6, DUTP **1173-82-6D**, DUTP, aminoaryl
1927-31-7, DATP **2056-98-6**, DCTP **2564-35-4**,
DGTP 3590-36-1 4224-70-8, 6-Bromo hexanoic acid 14315-97-0
20309-92-6 25981-83-3 39923-67-6 39923-68-7, 2-Methyl-ADP
42467-24-3, 2-Methyl-ATP 52940-67-7 52988-98-4 76528-21-7
80677-38-9 112242-04-3 130536-69-5 327174-86-7 366451-24-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(**fluorescent** labeled **nucleotide** synthesis and application as probes and primers)

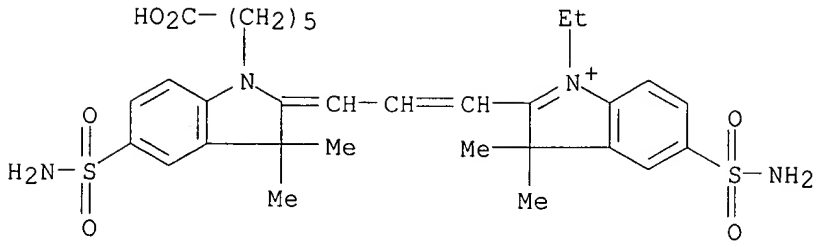
IT 366451-26-5DP, bromide 366451-27-6DP, bromide 366451-28-7DP, bromide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT 75-03-6, Ethyl iodide 62306-05-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; fluorescent labeled **nucleotide** synthesis and application as probes and primers)

IT 366451-25-4DP, iodide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(reactant; fluorescent labeled **nucleotide** synthesis and application as probes and primers)

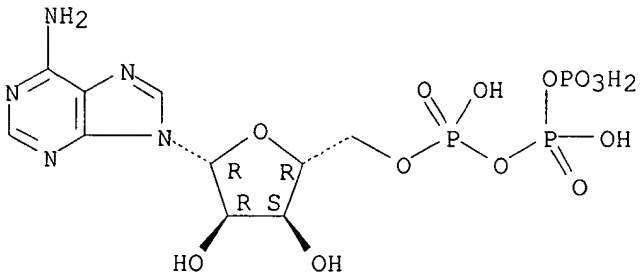
IT **366451-18-5P**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(fluorescent labeled **nucleotide** synthesis and application as probes and primers)

RN 366451-18-5 HCAPLUS
CN 3H-Indolium, 5-(aminosulfonyl)-2-[3-[5-(aminosulfonyl)-1-(5-carboxypentyl)-1,3-dihydro-3,3-dimethyl-2H-indol-2-ylidene]-1-propenyl]-1-ethyl-3,3-dimethyl- (9CI) (CA INDEX NAME)



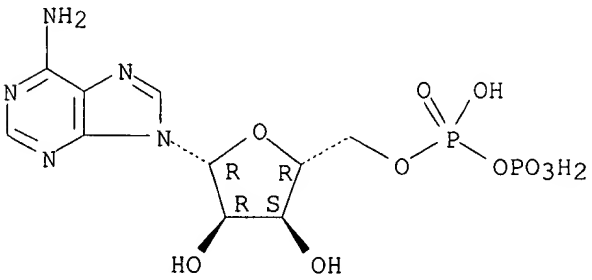
IT **56-65-5**, 5'-ATP, reactions **58-64-0**, 5'-ADP, reactions
58-97-9, 5'-UMP, reactions **58-98-0**, 5'-UDP, reactions
61-19-8, 5'-AMP, reactions **63-37-6**, CMP **63-38-7**
, CDP **63-39-8**, 5'-UTP **65-47-4**, 5'-CTP **85-32-5**
, 5'-GMP **86-01-1**, 5'-GTP **146-91-8**, 5'-GDP
365-07-1, DTMP **365-08-2**, TTP **1173-82-6**, DUTP
1173-82-6D, DUTP, aminoaryl **1927-31-7**, DATP
2056-98-6, DCTP **2564-35-4**, DGTP
RL: RCT (Reactant); RACT (Reactant or reagent)
(**fluorescent** labeled **nucleotide** synthesis and
application as probes and primers)
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



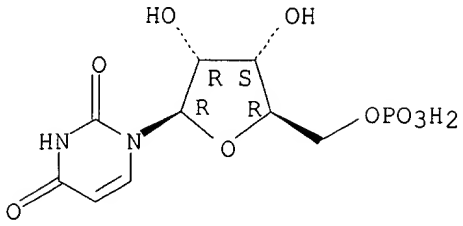
RN 58-64-0 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



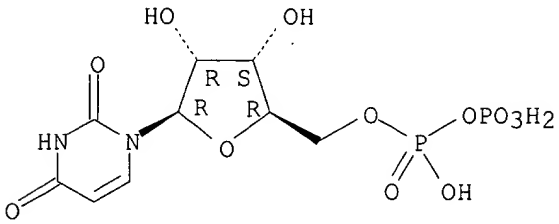
RN 58-97-9 HCAPLUS
CN 5'-Uridylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



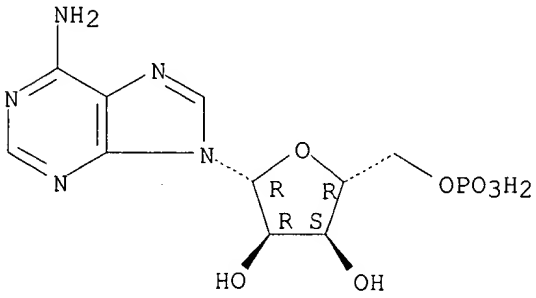
RN 58-98-0 HCAPLUS
CN Uridine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



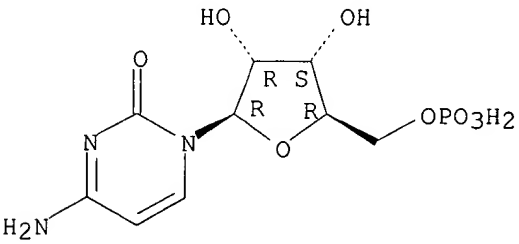
RN 61-19-8 HCAPLUS
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



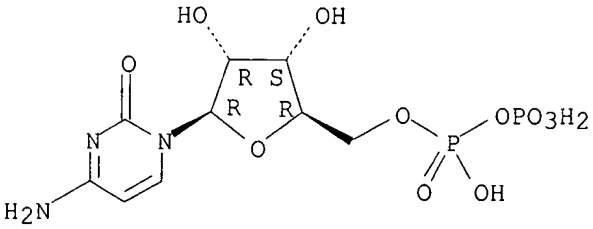
RN 63-37-6 HCAPLUS
CN 5'-Cytidylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



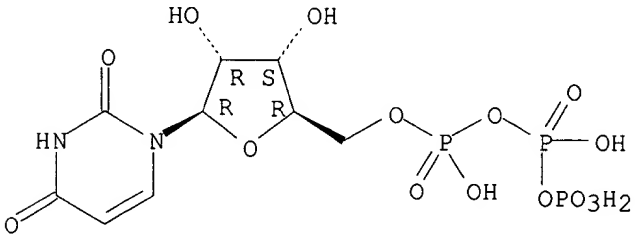
RN 63-38-7 HCAPLUS
CN Cytidine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



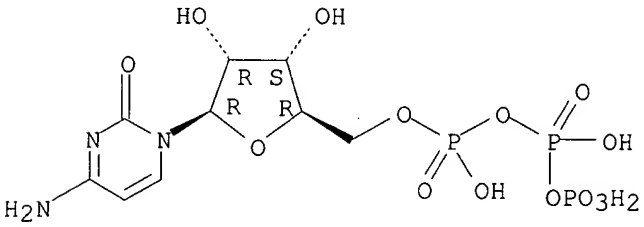
RN 63-39-8 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



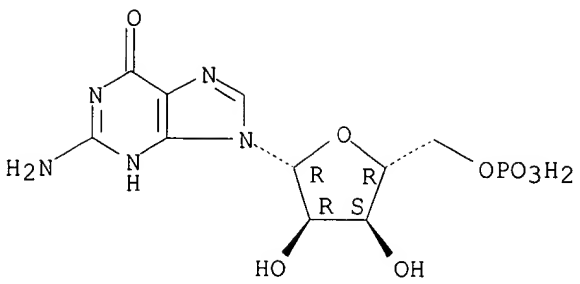
RN 65-47-4 HCAPLUS
CN Cytidine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



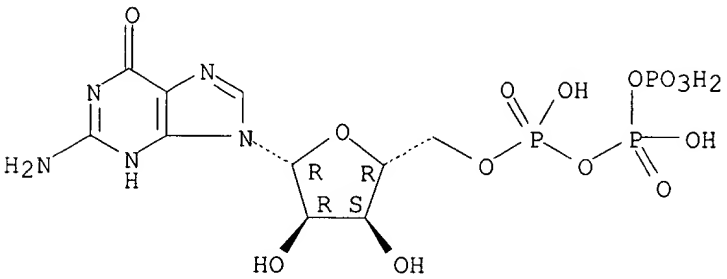
RN 85-32-5 HCAPLUS
CN 5'-Guanylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



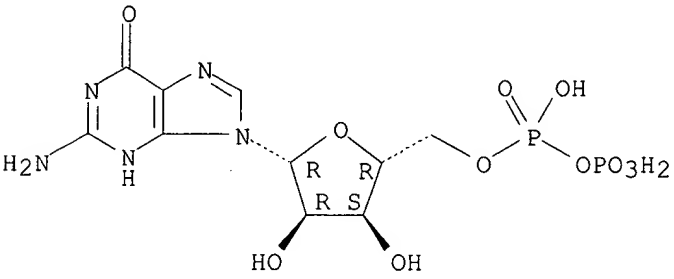
RN 86-01-1 HCAPLUS
CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



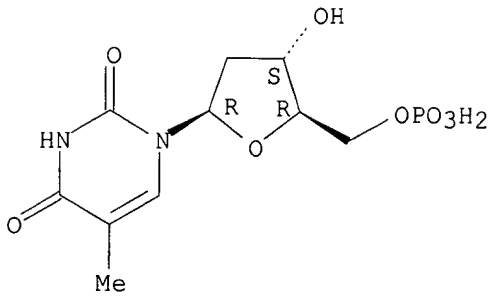
RN 146-91-8 HCAPLUS
CN Guanosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



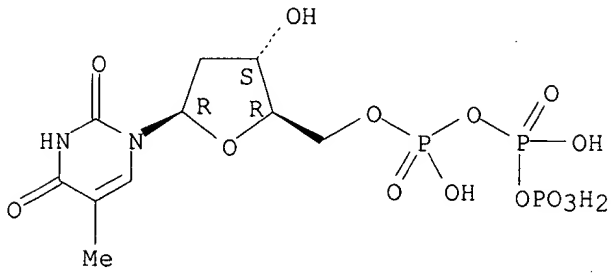
RN 365-07-1 HCAPLUS
CN 5'-Thymidylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



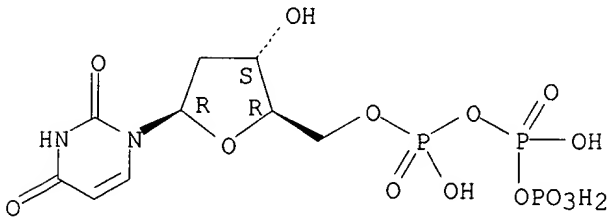
RN 365-08-2 HCAPLUS
CN Thymidine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



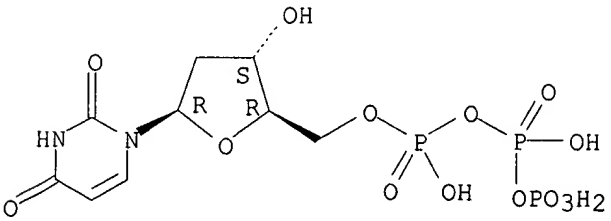
RN 1173-82-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



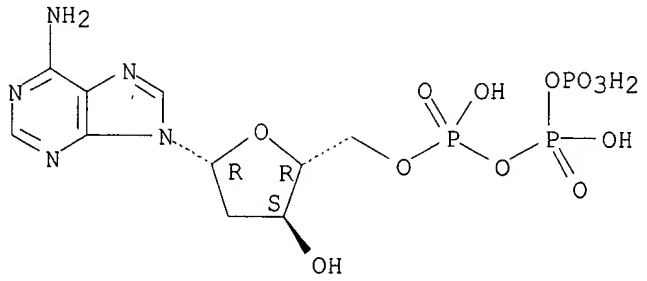
RN 1173-82-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



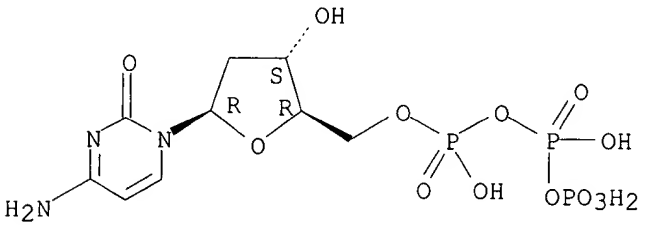
RN 1927-31-7 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



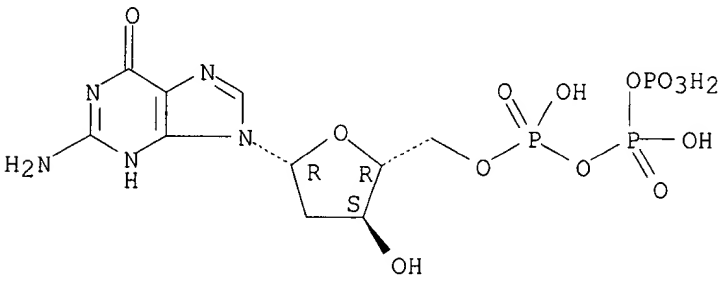
RN 2056-98-6 HCAPLUS
CN Cytidine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 2564-35-4 HCAPLUS
CN Guanosine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

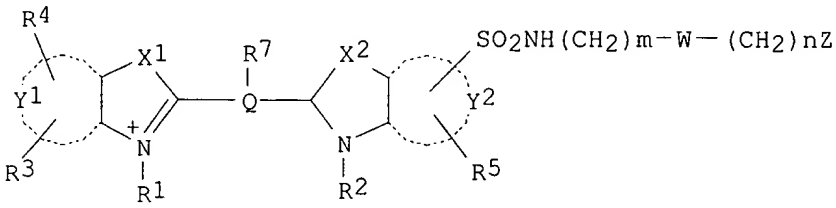


L56 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:10685 HCAPLUS
DOCUMENT NUMBER: 134:102214
TITLE: New fluorescent cyanine labels containing a **sulfonamido** linker arm
INVENTOR(S): Caputo, Giuseppe; Della, Ciana Leopoldo
PATENT ASSIGNEE(S): Innosense S.r.L., Italy; Visen Medical, Inc.

SOURCE: Eur. Pat. Appl., 94 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1065250	A1	20010103	EP 1999-112696	19990702
EP 1065250	B1	20041208		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 284433	E	20041215	AT 1999-112696	19990702
EP 1491591	A1	20041229	EP 2004-23147	19990702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
AU 776841	B2	20040923	AU 2000-42581	20000621
CA 2312099	AA	20010102	CA 2000-2312099	20000622
US 6448008	B1	20020910	US 2000-609035	20000630
BR 2000005843	A	20020102	BR 2000-5843	20000703

PRIORITY APPLN. INFO.: EP 1999-112696 A 19990702
OTHER SOURCE(S): MARPAT 134:102214
GI



I

AB Water-soluble fluorescent cyanine dyes, capable of being excited by inexpensive light-emitting diodes or diode lasers and of conjugating with a wide variety of biomols., have the structure I [Q = conjugated connecting group; R1, R2 = H, C1-4 (sulfo)alkyl; R3-R5 = H, SO3H, C1-4 sulfoalkyl, SO2NH(CH2)mW(CH2)nZ; W = direct link, SO2NH, O, CO2, CONH; X1, X2 = O, S, CMe2, C:CH2; Y1, Y2 = benzo, naphtho; Z is or contains a functional group capable of bonding to biomols.; m, n = 0-12; m + n = 1-12] or its salt. Thus, K 2,3,3-trimethyl-3H-indole-5-sulfonate was converted with PCl5 and POCl3 to the 5-sulfonyl chloride, which was condensed with glycine tert-Bu ester, and the product was alkylated with 1,4-butane sultone to give 5-[[(carboxymethyl)amino]sulfonyl]-2,3,3-trimethyl-1-(4-sulfobutyl)-3H-indolium inner salt (II). 2,3,3-Trimethyl-5-sulfo-1-(4-sulfobutyl)-3H-indolium inner salt was treated first with PhNHCH:NPh and then with II to give a I [Q = CH:CHCH:, R1 = R2 = (CH2)4SO3H; R3 = 5-SO3H, R4 = R5 = H, W = direct link, X1 = X2 = CMe2, Y1 = Y2 = benzo, Z = CO2H, m = 0, n = 1].

IC ICM C09B023-02
ICS C07H021-00; C07H019-04; C12Q001-68; G01N033-58
CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9
ST fluorescent cyanine dye marker; **sulfonamide** linker arm fluorescent label

IT **Fluorescent dyes**
(cyanine; fluorescent cyanine dye labels containing a **sulfonamido** linker arm)
IT **Nucleotides, analysis**
RL: ANT (Analyte); ANST (Analytical study)
(dideoxyribo-; **fluorescent** cyanine dye labels containing a **sulfonamido** linker arm for)
IT Immunoassay
(fluorescence; fluorescent cyanine dye labels containing a **sulfonamido** linker arm for)
IT Antibodies
Deoxyribonucleotides
Nucleosides, analysis
RL: ANT (Analyte); ANST (Analytical study)
(**fluorescent** cyanine dye labels containing a **sulfonamido** linker arm for)
IT **Cyanine dyes**
(fluorescent; fluorescent cyanine dye labels containing a **sulfonamido** linker arm)
IT **Nucleotides, analysis**
RL: ANT (Analyte); ANST (Analytical study)
(ribo-; **fluorescent** cyanine dye labels containing a **sulfonamido** linker arm for)
IT 115021-69-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(formation of conjugates of fluorescent cyanine dye labels containing a **sulfonamido** linker arm with)
IT 316829-76-2P 316829-77-3P 316829-78-4P 316829-79-5P 316829-80-8P
316829-81-9P 316829-82-0P 316829-83-1P 316829-84-2P 316829-85-3P
316829-86-4P 316829-87-5P 316829-88-6P 316829-89-7P 316829-90-0P
316829-91-1P 316829-92-2P 316829-93-3P 316829-94-4P 316829-95-5P
316829-96-6P 316829-97-7P 316829-99-9P 316830-00-9P 316830-01-0P
316830-02-1P 316830-03-2P 316830-04-3P 316830-05-4P 316830-06-5P
316830-07-6P 316830-08-7P 316830-09-8P 316830-10-1P 316830-11-2P
316830-13-4P 316830-14-5P 316830-15-6P 316830-16-7P 316830-17-8P
316830-18-9P 316830-19-0P 316830-20-3P 316830-21-4P 316830-22-5P
316830-23-6P 316830-24-7P 316830-25-8P 316830-26-9P 316830-27-0P
316830-28-1P 316830-29-2P 316830-30-5P 316830-31-6P 316830-32-7P
316830-33-8P 316830-34-9P 316830-35-0P 316830-36-1P 316830-37-2P
316830-38-3P 316830-39-4P 316830-40-7P 316830-41-8P 316830-42-9P
316830-43-0P 316830-44-1P 316830-45-2P 316830-46-3P 316830-47-4P
316830-48-5P 316830-49-6P 316830-50-9P 316830-51-0P 316830-52-1P
316830-53-2P 316830-54-3P 316830-55-4P 316830-56-5P 316830-57-6P
316830-58-7P 316830-59-8P 316830-60-1P 316830-61-2P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(preparation of fluorescent cyanine dye labels containing a **sulfonamido** linker arm)
IT 110-60-1, 1,4-Butanediamine 110-87-2, 3,4-Dihydro-2H-pyran 124-09-4, 1,6-Hexanediamine, reactions 407-25-0, Trifluoroacetic anhydride 622-15-1, N,N'-Diphenylformamidine 1633-83-6, 1,4-Butane sultone 4048-33-3, 6-Amino-1-hexanol 17576-35-1, 1,3,3-Trimethoxypropene 33148-94-6 58620-93-2 58640-01-0, tert-Butyl γ-aminobutyrate hydrochloride 76588-81-3 77284-30-1 184351-56-2, Potassium 2,3,3-trimethyl-3H-indole-5-sulfonate 316829-43-3, tert-Butyl ε-aminocaproate hydrochloride 316829-51-3 316829-98-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of fluorescent cyanine dye labels containing a **sulfonamido** linker arm)

IT 316829-38-6P, 2,3,3-Trimethyl-3H-indole-5-sulfonyl chloride 316829-39-7P
316829-40-0P 316829-41-1P 316829-42-2P 316829-44-4P,
N-(4-Aminobutyl)-2,3,3-trimethyl-3H-indole-5-**sulfonamide**
316829-45-5P, N-(6-Aminohexyl)-2,3,3-trimethyl-3H-indole-5-
sulfonamide 316829-46-6P, N-(6-Hydroxyhexyl)-2,3,3-trimethyl-3H-
indole-5-**sulfonamide** 316829-47-7P 316829-48-8P
316829-49-9P 316829-50-2P 316829-52-4P 316829-53-5P 316829-54-6P
316829-55-7P 316829-56-8P 316829-57-9P 316829-58-0P 316829-59-1P
316829-60-4P 316829-61-5P 316829-62-6P 316829-63-7P 316829-64-8P
316829-65-9P 316829-66-0P 316829-67-1P 316829-68-2P 316829-69-3P
316829-70-6P 316829-71-7P 316829-72-8P 316829-73-9P 316829-74-0P
316829-75-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of fluorescent cyanine dye labels containing a **sulfonamido** linker arm)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L56 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:788697 HCAPLUS
DOCUMENT NUMBER: 130:35377
TITLE: Conjugates of sulforhodamine fluorophores with enhanced fluorescence
INVENTOR(S): Kang, Hee Chol
PATENT ASSIGNEE(S): Molecular Probes, Inc., USA
SOURCE: U.S., 18 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5846737	A	19981208	US 1996-686858	19960726
PRIORITY APPLN. INFO.:			US 1996-686858	19960726
OTHER SOURCE(S):	MARPAT 130:35377			

AB The invention describes useful conjugates of sulforhodamine, wherein the conjugated substance and the fluorophore are separated by an alkanoic acid spacer that is attached to the fluorophore via a **sulfonamide** bond. The increased length of the covalent linkage due to the spacer results in dye-conjugates having a number of surprisingly advantageous properties relative to previous sulforhodamine-labeled conjugates, including increased fluorescence. Where the conjugated substance is a member of a specific binding pair, the dye-conjugates possess utility as detection reagents for the complementary binding pair member.
IC ICM G01N033-533
ICS C07K016-00; C07D311-88
INCL 435007100
CC 9-15 (Biochemical Methods)
Section cross-reference(s): 6
IT **Fluorescent dyes**
(conjugates; conjugates of sulforhodamine fluorophores with enhanced fluorescence)
IT **Nucleotides, analysis**
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(**dideoxynucleotides**, dye-conjugates; conjugates of

sulforhodamine **fluorophores** with enhanced **fluorescence**)

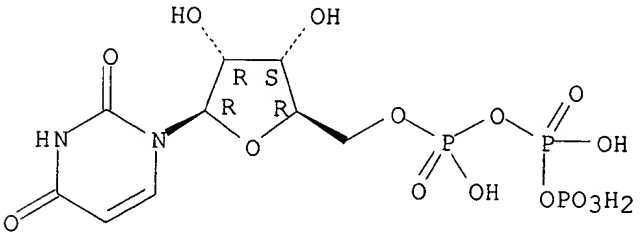
IT Carbohydrates, analysis
DNA
Lipoproteins
Nucleotides, analysis
Oligonucleotides
Polysaccharides, analysis
RNA
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(dye-conjugates; conjugates of sulforhodamine **fluorophores** with enhanced **fluorescence**)

IT **63-39-8DP**, Uridine triphosphate, dye-conjugates
1173-82-6DP, Deoxyuridine triphosphate, dye-conjugates
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(conjugates of sulforhodamine **fluorophores** with enhanced **fluorescence**)

IT **63-39-8DP**, Uridine triphosphate, dye-conjugates
1173-82-6DP, Deoxyuridine triphosphate, dye-conjugates
RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)
(conjugates of sulforhodamine **fluorophores** with enhanced **fluorescence**)

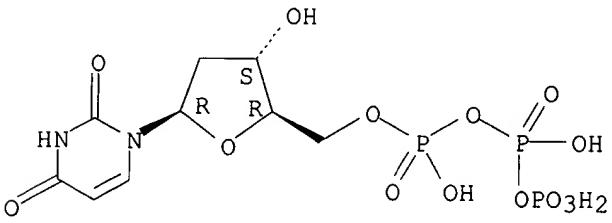
RN 63-39-8 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



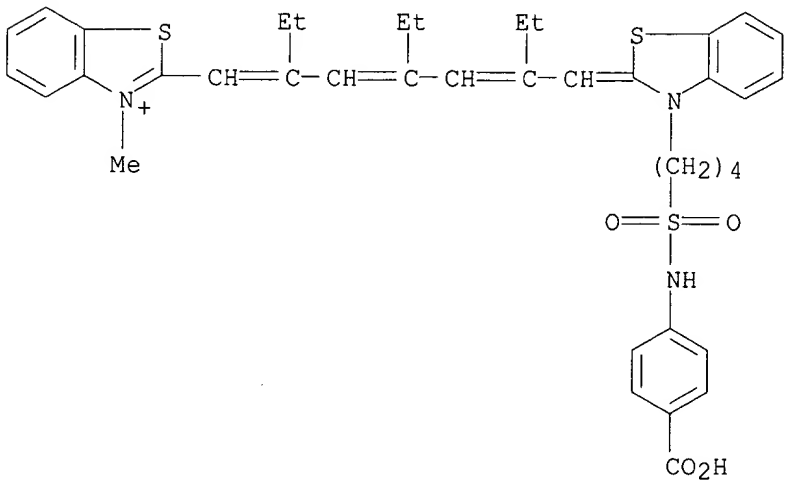
RN 1173-82-6 HCAPLUS
CN Uridine 5'-(tetrahydrogen triphosphate), 2'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

2(3H)-benzothiazolylidene]methyl]-2,4-diethyl-1,3,5-octatrienyl]-3-methyl-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

L56 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:170988 HCAPLUS
DOCUMENT NUMBER: 118:170988
TITLE: Polymer-bound fluorescent dyes and their use
INVENTOR(S): Heiliger, Ludger; Siegmund, Hans Ulrich; Hugel, Herbert; Loebberding, Antonius; Kuckert, Eberhard; Boemer, Brud; Boecker, Thomas; Franke, Guenter
PATENT ASSIGNEE(S): Bayer A.-G., Germany
SOURCE: Ger. Offen., 10 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4114482	A1	19921105	DE 1991-4114482	19910503
EP 513560	A1	19921119	EP 1992-106783	19920421
EP 513560	B1	19950920		
R: CH, DE, FR, GB, IT, LI, SE				
JP 05230393	A2	19930907	JP 1992-131366	19920427
US 5298583	A	19940329	US 1992-875167	19920428
CA 2067645	AA	19921104	CA 1992-2067645	19920430

PRIORITY APPLN. INFO.: DE 1991-4114482 A 19910503

AB The dyes, (A)a(B)b(C)c(D)d, where A is a water-solubilizing group, B is an ester, amide, urethane, urea, or thiourea group-containing fluorescent mol., C is aromatic or a second fluorescent group, and (D) is a mol. capable of forming a covalent bond with a protein and optionally with component B and(or) C, and a + b + c + d = 100%, are obtained for fluorescent marking

of biol. substances. Thus, a 7-**sulfonamido** derivative of 3-(4-aminophenyl)coumarin was condensed with acryloyl chloride to provide 85% acrylamide derivative, which could be copolymd. with Na 2-acrylamido-2-propanesulfonate, Na p-styrylsulfonate, and/or 2-naphthyl acrylate.

IC ICM C09B069-10
ICS C09K011-06; G01N001-30

ICA C09B057-00; C09B057-02; C09B057-08; C09B003-78; C09B011-12

CC 41-1 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 35

IT **Dyes**
(**fluorescent**, polymerizable, preparation and application of)

IT **Nucleotides, polymers**
RL: USES (Uses)
(**oligo-, fluorescent** polymeric dyes as labels and markers for)

IT 147024-89-3DP, **sulfonamido** derivative
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation and polymerization of fluorescent)

IT 1218-54-8D, **sulfonamido** derivative 131788-68-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with acryloyl chloride)

```
=> d que stat
L1        26778 SEA FILE=WPIX ABB=ON  PLU=ON  B04-E01/MC
L2        21339 SEA FILE=WPIX ABB=ON  PLU=ON  B04-E05/MC
L3         7416 SEA FILE=WPIX ABB=ON  PLU=ON  L1 AND L2
L5        20421 SEA FILE=WPIX ABB=ON  PLU=ON  B11-C08E5/MC
L6         5578 SEA FILE=WPIX ABB=ON  PLU=ON  L3 AND L5
L7        26902 SEA FILE=WPIX ABB=ON  PLU=ON  B12-K04F/MC
L8         5039 SEA FILE=WPIX ABB=ON  PLU=ON  L6 AND L7
L11        1177 SEA FILE=WPIX ABB=ON  PLU=ON  L8 AND ?FLUORES?
L12         845 SEA FILE=WPIX ABB=ON  PLU=ON  L11 AND ?NUCLEOTID?
L13           6 SEA FILE=WPIX ABB=ON  PLU=ON  L12 AND ?SULFONAMID?
L14           6 SEA FILE=WPIX ABB=ON  PLU=ON  L13 AND (DYE? OR ?LABEL? OR
                ?PROB? OR PRIMER?)


=> d l14 ibib abs kwic 1-6

L14  ANSWER 1 OF 6  WPIX  COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER:      2004-130831 [13]   WPIX
CROSS REFERENCE:       2001-007201 [01]; 2002-075152 [10]; 2003-129427 [12];
                       2003-182493 [18]; 2003-183881 [18]; 2003-237970 [23];
                       2003-505116 [47]; 2003-597938 [56]; 2003-617918 [58];
                       2003-777244 [73]; 2003-800810 [75]; 2003-842577 [78];
                       2003-843672 [78]; 2004-070573 [07]; 2004-118571 [12];
                       2004-156863 [15]; 2004-294400 [27]; 2004-614756 [59];
                       2004-718458 [70]; 2004-737692 [72]; 2004-766859 [75];
                       2004-821135 [81]; 2004-821145 [81]; 2005-012615 [01];
                       2005-056557 [06]; 2005-130051 [14]; 2005-202666 [21];
                       2005-212277 [22]; 2005-315587 [32]; 2005-344285 [35];
                       2005-443802 [45]; 2005-562735 [57]; 2005-562736 [57]
DOC. NO. CPI:          C2004-052186
TITLE:                 Detecting and/or measuring multiple analytes in sample by
                       nucleic acid based signal amplification system for
                       simultaneous generation of multiple molecular tags.
DERWENT CLASS:         B04 C07 D16
INVENTOR(S):           MACEVICZ, S C; MATRAY, T; SINGH, S; MATRAY, T J; SINGH, S
                       S
PATENT ASSIGNEE(S):    (ACLA-N) ACLARA BIOSCIENCES INC; (MACE-I) MACEVICZ S C;
                       (MATR-I) MATRAY T J; (SING-I) SINGH S S
COUNTRY COUNT:         102
PATENT INFORMATION:

     PATENT NO        KIND DATE     WEEK      LA   PG
     ---------------------------------------------
     US 2003207300    A1 20031106 (200413)*      66
     WO 2004063700    A2 20040729 (200451)  EN
        RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE
            LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
         W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
            DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
            KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
            RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
     AU 2003296989    A1 20040810 (200479)
     EP 1581796       A2 20051005 (200565)  EN
         R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV
            MC MK NL PT RO SE SI SK TR

APPLICATION DETAILS:
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PATENT NO	KIND	APPLICATION	DATE
US 2003207300	A1 CIP of	US 2000-561579	20000428
	CIP of	US 2000-602586	20000621
	CIP of	US 2000-698846	20001027
	CIP of	US 2002-154042	20020521
		US 2003-338729	20030107
		WO 2003-US39613	20031212
		AU 2003-296989	20031212
		EP 2003-815205	20031212
		WO 2003-US39613	20031212
WO 2004063700	A2		
AU 2003296989	A1		
EP 1581796	A2		

FILING DETAILS:

PATENT NO	KIND	PATENT NO
US 2003207300	A1 CIP of	US 6514700
AU 2003296989	A1 Based on	WO 2004063700
EP 1581796	A2 Based on	WO 2004063700

PRIORITY APPLN. INFO: US 2003-338729 20030107; US 2000-561579 20000428; US 2000-602586 20000621; US 2000-698846 20001027; US 2002-154042 20020521

AN 2004-130831 [13] WPIX

CR 2001-007201 [01]; 2002-075152 [10]; 2003-129427 [12]; 2003-182493 [18]; 2003-183881 [18]; 2003-237970 [23]; 2003-505116 [47]; 2003-597938 [56]; 2003-617918 [58]; 2003-777244 [73]; 2003-800810 [75]; 2003-842577 [78]; 2003-843672 [78]; 2004-070573 [07]; 2004-118571 [12]; 2004-156863 [15]; 2004-294400 [27]; 2004-614756 [59]; 2004-718458 [70]; 2004-737692 [72]; 2004-766859 [75]; 2004-821135 [81]; 2004-821145 [81]; 2005-012615 [01]; 2005-056557 [06]; 2005-130051 [14]; 2005-202666 [21]; 2005-212277 [22]; 2005-315587 [32]; 2005-344285 [35]; 2005-443802 [45]; 2005-562735 [57]; 2005-562736 [57]

AB US2003207300 A UPAB: 20051011

NOVELTY - Generating (M1) molecular tags (MT) indicative of several of **polynucleotides** (PN) in sample, comprising extending **primer** annealed to each PN to form detection **probe** (DP) having MT and either a sensitizer or a capture moiety, generating detectable amounts of DP, activating sensitizers to generate active species that cleaves the linkages, thus releasing MT, and separating and identifying released MT, is new.

DETAILED DESCRIPTION - Generating (M1) molecular tags indicative of several **polynucleotides** in a sample, comprising:

(a) extending a **primer** annealed to each **polynucleotide** to form a detection **probe** under conditions that permit dissociation of detection **probes** from the **polynucleotides** after extension, each detection **probe** having a molecular tag and either a sensitizer with an effective proximity or a capture moiety, the molecular tag being attached by a cleavable linkage and within the effective proximity of the sensitizer upon dissociation of the detection **probe** from the **polynucleotide** when the detection **probe** has a sensitizer attached, and the molecular tag being chosen from several molecular tags so that each molecular tag has one or more physical and/or optical characteristics distinct from those of the other molecular tags so that each molecular tag forms a distinguishable peak upon cleavage and separation based on one or more physical and/or optical characteristics;

```
=> d que stat
L1        26778 SEA FILE=WPIX ABB=ON  PLU=ON  B04-E01/MC
L2        21339 SEA FILE=WPIX ABB=ON  PLU=ON  B04-E05/MC
L3         7416 SEA FILE=WPIX ABB=ON  PLU=ON  L1 AND L2
L5        20421 SEA FILE=WPIX ABB=ON  PLU=ON  B11-C08E5/MC
L6         5578 SEA FILE=WPIX ABB=ON  PLU=ON  L3 AND L5
L7        26902 SEA FILE=WPIX ABB=ON  PLU=ON  B12-K04F/MC
L8         5039 SEA FILE=WPIX ABB=ON  PLU=ON  L6 AND L7
L11        1177 SEA FILE=WPIX ABB=ON  PLU=ON  L8 AND ?FLUORES?
L12         845 SEA FILE=WPIX ABB=ON  PLU=ON  L11 AND ?NUCLEOTID?
L13           6 SEA FILE=WPIX ABB=ON  PLU=ON  L12 AND ?SULFONAMID?
L14           6 SEA FILE=WPIX ABB=ON  PLU=ON  L13 AND (DYE? OR ?LABEL? OR
                ?PROB? OR PRIMER?)


=> d l14 ibib ab's kwic 1-6

L14  ANSWER 1 OF 6  WPIX  COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER:      2004-130831 [13]   WPIX
CROSS REFERENCE:       2001-007201 [01]; 2002-075152 [10]; 2003-129427 [12];
                       2003-182493 [18]; 2003-183881 [18]; 2003-237970 [23];
                       2003-505116 [47]; 2003-597938 [56]; 2003-617918 [58];
                       2003-777244 [73]; 2003-800810 [75]; 2003-842577 [78];
                       2003-843672 [78]; 2004-070573 [07]; 2004-118571 [12];
                       2004-156863 [15]; 2004-294400 [27]; 2004-614756 [59];
                       2004-718458 [70]; 2004-737692 [72]; 2004-766859 [75];
                       2004-821135 [81]; 2004-821145 [81]; 2005-012615 [01];
                       2005-056557 [06]; 2005-130051 [14]; 2005-202666 [21];
                       2005-212277 [22]; 2005-315587 [32]; 2005-344285 [35];
                       2005-443802 [45]; 2005-562735 [57]; 2005-562736 [57]
DOC. NO. CPI:          C2004-052186
TITLE:                 Detecting and/or measuring multiple analytes in sample by
                       nucleic acid based signal amplification system for
                       simultaneous generation of multiple molecular tags.
DERWENT CLASS:         B04 C07 D16
INVENTOR(S):           MACEVICZ, S C; MATRAY, T; SINGH, S; MATRAY, T J; SINGH, S
                       S
PATENT ASSIGNEE(S):    (ACLA-N) ACLARA BIOSCIENCES INC; (MACE-I) MACEVICZ S C;
                       (MATR-I) MATRAY T J; (SING-I) SINGH S S
COUNTRY COUNT:         102
PATENT INFORMATION:

     PATENT NO        KIND DATE     WEEK      LA   PG
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     US 2003207300    A1 20031106 (200413)*      66
     WO 2004063700    A2 20040729 (200451)  EN
        RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE
            LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
         W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
            DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR
            KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT
            RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
     AU 2003296989    A1 20040810 (200479)
     EP 1581796       A2 20051005 (200565)  EN
         R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV
            MC MK NL PT RO SE SI SK TR

APPLICATION DETAILS:
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PATENT NO	KIND		APPLICATION	DATE
US 2003207300	A1	CIP of	US 2000-561579	20000428
		CIP of	US 2000-602586	20000621
		CIP of	US 2000-698846	20001027
		CIP of	US 2002-154042	20020521
			US 2003-338729	20030107
WO 2004063700	A2		WO 2003-US39613	20031212
AU 2003296989	A1		AU 2003-296989	20031212
EP 1581796	A2		EP 2003-815205	20031212
			WO 2003-US39613	20031212

FILING DETAILS:

PATENT NO	KIND		PATENT NO
US 2003207300	A1	CIP of	US 6514700
AU 2003296989	A1	Based on	WO 2004063700
EP 1581796	A2	Based on	WO 2004063700

PRIORITY APPLN. INFO: US 2003-338729 20030107; US 2000-561579 20000428; US 2000-602586 20000621; US 2000-698846 20001027; US 2002-154042 20020521

AN 2004-130831 [13] WPIX

CR 2001-007201 [01]; 2002-075152 [10]; 2003-129427 [12]; 2003-182493 [18]; 2003-183881 [18]; 2003-237970 [23]; 2003-505116 [47]; 2003-597938 [56]; 2003-617918 [58]; 2003-777244 [73]; 2003-800810 [75]; 2003-842577 [78]; 2003-843672 [78]; 2004-070573 [07]; 2004-118571 [12]; 2004-156863 [15]; 2004-294400 [27]; 2004-614756 [59]; 2004-718458 [70]; 2004-737692 [72]; 2004-766859 [75]; 2004-821135 [81]; 2004-821145 [81]; 2005-012615 [01]; 2005-056557 [06]; 2005-130051 [14]; 2005-202666 [21]; 2005-212277 [22]; 2005-315587 [32]; 2005-344285 [35]; 2005-443802 [45]; 2005-562735 [57]; 2005-562736 [57]

AB US2003207300 A UPAB: 20051011

NOVELTY - Generating (M1) molecular tags (MT) indicative of several of **polynucleotides** (PN) in sample, comprising extending **primer** annealed to each PN to form detection **probe** (DP) having MT and either a sensitizer or a capture moiety, generating detectable amounts of DP, activating sensitizers to generate active species that cleaves the linkages, thus releasing MT, and separating and identifying released MT, is new.

DETAILED DESCRIPTION - Generating (M1) molecular tags indicative of several **polynucleotides** in a sample, comprising:

(a) extending a **primer** annealed to each **polynucleotide** to form a detection **probe** under conditions that permit dissociation of detection **probes** from the **polynucleotides** after extension, each detection **probe** having a molecular tag and either a sensitizer with an effective proximity or a capture moiety, the molecular tag being attached by a cleavable linkage and within the effective proximity of the sensitizer upon dissociation of the detection **probe** from the **polynucleotide** when the detection **probe** has a sensitizer attached, and the molecular tag being chosen from several molecular tags so that each molecular tag has one or more physical and/or optical characteristics distinct from those of the other molecular tags so that each molecular tag forms a distinguishable peak upon cleavage and separation based on one or more physical and/or optical characteristics;

(b) generating detectable amounts of detection **probes** in the step of extending, activating the sensitizers to generate an active species so that the cleavable linkages are cleaved and the molecular tags are released; and

(c) separating and identifying the released molecular tags to determine several **polynucleotides** in the sample.

An INDEPENDENT CLAIM is also included for a composition (C) of matter having formula (I) or (II), or comprising one or more photosensitizer beads having a complementary moiety attached, the complementary moiety capable of capturing a capture moiety, and one or more **oligonucleotides** each having attached a capture moiety and a molecular tag, the molecular tag attached by a cleavable linkage, and each molecular tag chosen from several molecular tags such that each molecular tag has one or more physical and/or optical characteristics distinct from those of the other molecular tags such that each molecular tag forms a distinguishable peak upon cleavage and separation based on one or more physical and/or optical characteristics, where each of the one or more **oligonucleotides** are attached to the one or more photosensitizer beads by specific binding of the capture moiety to the complementary moiety.

B = nucleobase;

R1 = OH, mono- or di- triphosphate, or its analog;

R2 = -OH, H, F, Cl, NH2, N3, or OR';

R3 = -OH, H, F, Cl, NH2, N3 or OR';

R' = 1-6C alkyl;

L = cleavable linkage;

L' = diradical moiety of 1-50 atoms chosen from hydrogen, carbon, oxygen, nitrogen, phosphorous and sulfur;

PS = photosensitizer;

D = detection moiety; and

M = a bond or a water soluble organic compound consisting of 1-100 atoms, not including hydrogen, chosen from carbon, oxygen, nitrogen, phosphorous, boron, sulfur.

USE - (M1) is useful for generating molecular tags indicative of several of **polynucleotides** in a sample (claimed).

ADVANTAGE - (M1) exhibits greater sensitivity, convenient multiplexing capability, and reduced background.

DESCRIPTION OF DRAWING(S) - The drawing shows generation of reaction **probes** with a polymerase that extends a molecular tag-**labeled primer** by a single **nucleotide** having a photosensitizer attached.

Dwg.1A/11

AB US2003207300 UPAB: 20051011

NOVELTY - Generating (M1) molecular tags (MT) indicative of several of **polynucleotides** (PN) in sample, comprising extending **primer** annealed to each PN to form detection **probe** (DP) having MT and either a sensitizer or a capture moiety, generating detectable amounts of DP, activating sensitizers to generate. . . releasing MT, and separating and identifying released MT, is new.

DETAILED DESCRIPTION - Generating (M1) molecular tags indicative of several **polynucleotides** in a sample, comprising:

(a) extending a **primer** annealed to each **polynucleotide** to form a detection **probe** under conditions that permit dissociation of detection **probes** from the **polynucleotides** after extension, each detection **probe** having a molecular tag and either a sensitizer with an effective proximity or a capture moiety, the molecular tag being attached by a cleavable linkage and within the effective proximity of the sensitizer upon dissociation of the detection **probe** from the

polynucleotide when the detection **probe** has a sensitizer attached, and the molecular tag being chosen from several molecular tags so that each molecular tag has. . . peak upon cleavage and separation based on one or more physical and/or optical characteristics;

(b) generating detectable amounts of detection **probes** in the step of extending, activating the sensitizers to generate an active species so that the cleavable linkages are cleaved and the molecular tags are released; and

(c) separating and identifying the released molecular tags to determine several **polynucleotides** in the sample.

An INDEPENDENT CLAIM is also included for a composition (C) of matter having formula (I) or (II),. . . photosensitizer beads having a complementary moiety attached, the complementary moiety capable of capturing a capture moiety, and one or more **oligonucleotides** each having attached a capture moiety and a molecular tag, the molecular tag attached by a cleavable linkage, and each. . . upon cleavage and separation based on one or more physical and/or optical characteristics, where each of the one or more **oligonucleotides** are attached to the one or more photosensitizer beads by specific binding of the capture moiety to the complementary moiety.. . . from carbon, oxygen, nitrogen, phosphorous, boron, sulfur.

USE - (M1) is useful for generating molecular tags indicative of several of **polynucleotides** in a sample (claimed).

ADVANTAGE - (M1) exhibits greater sensitivity, convenient multiplexing capability, and reduced background.

DESCRIPTION OF DRAWING(S) - The drawing shows generation of reaction **probes** with a polymerase that extends a molecular tag-**labeled primer** by a single **nucleotide** having a photosensitizer attached.

Dwg.1A/11

TECH. . .

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: In (M1), the step of extending includes extending with a DNA polymerase the **primer** by a terminator, the terminator having the sensitizer attached or the capture moiety attached. The terminator has the capture moiety attached, and where after the step of generating detectable amounts of the detection **probes**, a further step of capturing each of the detection **probes** by a complementary moiety of the capture moiety, the complementary moiety being attached to a photosensitizer bead. The capture moiety. . . D are as described above. The several molecular tags is in the range of 2-100, and where D is a **fluorescent label** .

Preferred Composition: In (C), L is chosen from olefins, thioethers, selenoethers, thiazoles, oxazoles, and imidazoles having 6-100 atoms, not including hydrogen, chosen from carbon, oxygen, nitrogen, phosphorus, boron, and sulfur. D is a **fluorescent**, a chromogenic, or an electrochemical **label**. M is a polymer chosen from polyethers, polyesters, polypeptides, oligosaccharides, polyurethanes, polyamides, **polysulfonamides**, polysulfoxides, polyphosphonates, and its block copolymers. Preferably, D is a **fluorescein** which is chosen from 5- and 6-**carboxyfluorescein**, 5- and 6-carboxy-4,7-**dichlorofluorescein**, 2'-7'-dimethoxy-5- and 6-carboxy-4,7-**dichlorofluorescein**, 2',7'-dimethoxy-4',5'-dichloro-5- and 6-**carboxyfluorescein**, 2',7'-dimethoxy-4',5'-dichloro-5- and 6-carboxy-4,7-**dichlorofluorescein**. L is chosen from olefins, thioethers, selenoethers, thiazoles, oxazoles, and imidazoles. The molecular tags is in the range of from. . .

MC CPI: B04-B03; **B04-E01**; **B04-E05**; **B11-C08E5**; **B12-K04F**; C04-B03; C04-E01; C04-E05; C11-C08E5; C12-K04F;

D05-A02B; D05-H09; D05-H12D1; D05-H18B

L14 ANSWER 2 OF 6 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-039601 [03] WPIX
DOC. NO. CPI: C2003-009343
TITLE: Novel polymorphisms of N-acetyltransferase 2 gene involved in drug metabolism and various disorders useful in therapeutics and to identify polymorphisms as a predisposition to various diseases e.g. cancer, leprosy.
DERWENT CLASS: B04 D16
INVENTOR(S): FITZGERALD, M; THOMANN, H; WALL, K
PATENT ASSIGNEE(S): (FITZ-I) FITZGERALD M; (THOM-I) THOMANN H; (WALL-I) WALL K
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2002128215	A1	20020912	(200303)*		24

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2002128215	A1 Provisional	US 2000-179876P	20000202
		US 2001-776407	20010202

PRIORITY APPLN. INFO: US 2000-179876P 20000202; US 2001-776407 20010202
AN 2003-039601 [03] WPIX
AB US2002128215 A UPAB: 20030113
NOVELTY - An isolated nucleic acid (I) comprising at least 15 consecutive **nucleotide** bases including a polymorphic site in the wild type N-acetyltransferase 2 (NAT-2) gene, is new.

DETAILED DESCRIPTION - An isolated nucleic acid (I) comprising at least 15 consecutive **nucleotide** bases including a polymorphic site in the wild type N-acetyltransferase 2 (NAT-2) gene, is new.

(I) comprises at least 15 consecutive **nucleotide** bases including a polymorphic site chosen from C to G substitution at **nucleotide** -255, 403 or 51, C to T substitution at **nucleotide** -234, a T to A substitution at **nucleotide** 70, G to T substitution at **nucleotide** 609 and a G to A substitution at **nucleotide** 838 in the wild type NAT-2 gene which has a sequence (S1) of 1170 bp given in the specification.

INDEPENDENT CLAIMS are included for the following:

(1) an isolated allele specific **primer** (II) capable of detecting a polymorphic site of (S1);

(2) an isolated allele specific **oligonucleotide probe** (III) capable of detecting a polymorphic site of (S1);

(3) a diagnostic kit (IV) comprising (II) or (III);

(4) an isolated nucleic acid (V) comprising at least 50 consecutive nucleic acids of (S1) containing at least one of the polymorphic sites as above;

(5) an expression vector (VI) containing (I) or (V);

(6) a host cell (VII) containing (VI);

(7) an isolated polypeptide (VIII) comprising at least 5 consecutive amino acid bases, one or more of which are encoded by the **nucleotides** at a polymorphic site of (I) or its complement;

(8) an isolated polypeptide (IX) comprising at least 5 consecutive amino acid bases including a polymorphic site chosen from a Asn to substitution at amino acid position 17, a Leu to Ile substitution at position 24, a Leu to Val substitution at position 135, a Glu to Asp substitution at position 203, and a Val to Met substitution at position 280 of a sequence (S2) of 291 amino acids given in the specification;

(9) an isolated amino acid sequence (X) having 80% identity to (IX);

(10) an antibody (XI) or its fragment which binds to any of the above polypeptide sequences;

(11) an antisense **oligonucleotide** (XII) comprising at least 5 **nucleotide** bases of a polymorphic site of (I);

(12) detecting (M1) (I), by a method chosen from restriction fragment length polymorphism detection based on allele specific restriction endonuclease cleavage, hybridization with allele specific **oligonucleotide probes**, **oligonucleotide** arrays, allele specific polymerase chain reaction (PCR), mismatch repair detection (MRD), denaturing gradient gel electrophoresis (DGGE), single strand conformation polymorphism detection (SSCP), RNAase cleavage at mismatched bp chemical or cleavage of heteroduplex DNA, methods based on allele specific **primer** extension, genetic bit analysis (GBA), **oligonucleotide** ligation assay (OLA), allele specific ligation chain reaction (LCR), gap, radioactive and/or **fluorescent** DNA sequencing, and peptide nucleic acid (PNA) assays;

(13) identifying (M2) a polymorphism of (I) in a mammal, by preparing a sample of cells or tissue of the mammal, **probing** the tissue or cell with all or a portion of a polymorphism of (I) under conditions where hybridized DNA can be produced, identifying the hybridized DNA and cloning and sequencing the hybridized DNA to obtain and identify the NAT-2 gene in the mammal;

(14) treating (M3) a NAT-2 disorder by administering a molecule which binds to an endogenous analog of NAT-2 or a compound which is an agonist or antagonist of (I), its variant or fragment;

(15) **labeling** (M4) an individual in a clinical trial, by producing a library of SNPs including the polymorphic sites of (I) and their respective phenotype, sequencing an individuals NAT-2 gene, matching the genotype with the phenotype;

(16) creating (M5) a prognosis protocol by identifying patients receiving at least one NAT-2 drug, determining whether they are rapid acetylator or a slow acetylator, and converting the data obtained into a prognosis protocol;

(17) identifying (M6) therapeutic compositions which are efficacious in individuals, by administering a therapeutic composition to an individual and measuring its efficacy, determining by the individual's genotype and the polymorphic sites of (I) whether the individual is a rapid acetylator and slow acetylator, and determining which therapeutic composition will be the most effective for that particular genotype and which will have the least adverse effects;

(18) identifying (M7) an individual, by sequencing an individual's NAT-2 gene, comparing the results the frequency of NAT-2 in the population as given in the specification, using the data with other polymorphic sites in the human genome to statistically conclude the likelihood of the set of SNPs from this individual as compared to the general population;

(19) genetically linking (M8) a first individual to a second individual, by sequencing the NAT-2 gene of the first individual and parents of the second individual, comparing the particular SNPs from the two parents with the SNPs of the second individual, matching SNPs of the parents of the second individual and assessing, through statistical methods utilizing the frequency given in the specification, the likelihood of this frequency of SNPs in the general population; and

(20) a computer readable medium (XIII) comprising (I).
ACTIVITY - Cytostatic; Antileprotic. No biological data given.
MECHANISM OF ACTION - Gene therapy; Modulator of (I).
USE - (I) is useful for diagnosis and gene therapy, to identify DNA **probes** for NAT-2 genes, PCR **primers** to amplify NAT-2 genes and regulatory elements of the NAT-2 genes. (I) is useful for identifying individuals and in paternity testing. (I) is useful as a valuable information source to characterize individuals in terms of haplotypes and other sub-groupings, such as investigation of susceptibility to treatment with particular drugs. The **polynucleotide** sequences are particularly useful as components in databases useful for sequence identity and other search analyses. (IX) is useful as an immunogen to generate antibody that binds the polymorphic protein, and for screening for drugs. (M3) is useful for treating NAT-2 disorders such as bladder cancer, colon cancer, prostate cancer, Gilbert's disease and leprosy. (I) is useful in diagnosing individuals with NAT-2 polymorphisms which are associated with these diseases and affect the metabolism of the compounds. (M5) is useful for creating a prognosis protocol for a patient receiving a therapeutic composition metabolized by NAT-2 such as isoniazid, phenylzine, hydrazine, dapsone, procainamide, sulfamethazine and other **sulfonamides**. The prognosis protocol includes prediction of drug efficacy, prediction of patient's prognosis, prediction of drug interaction and prediction of adverse effects. Cells and animals that carry the NAT-2 gene or its analog are useful as model systems to study and test for substances that have potential as therapeutic agents.
Dwg.0/2

AB US2002128215 UPAB: 20030113
NOVELTY - An isolated nucleic acid (I) comprising at least 15 consecutive **nucleotide** bases including a polymorphic site in the wild type N-acetyltransferase 2 (NAT-2) gene, is new.
DETAILED DESCRIPTION - An isolated nucleic acid (I) comprising at least 15 consecutive **nucleotide** bases including a polymorphic site in the wild type N-acetyltransferase 2 (NAT-2) gene, is new.
(I) comprises at least 15 consecutive **nucleotide** bases including a polymorphic site chosen from C to G substitution at **nucleotide** -255, 403 or 51, C to T substitution at **nucleotide** -234, a T to A substitution at **nucleotide** 70, G to T substitution at **nucleotide** 609 and a G to A substitution at **nucleotide** 838 in the wild type NAT-2 gene which has a sequence (S1) of 1170 bp given in the specification.
INDEPENDENT CLAIMS are included for the following:
(1) an isolated allele specific **primer** (II) capable of detecting a polymorphic site of (S1);
(2) an isolated allele specific **oligonucleotide probe** (III) capable of detecting a polymorphic site of (S1);
(3) a diagnostic kit (IV) comprising (II) or (III);
. . . isolated polypeptide (VIII) comprising at least 5 consecutive amino acid bases, one or more of which are encoded by the **nucleotides** at a polymorphic site of (I) or its complement;
(8) an isolated polypeptide (IX) comprising at least 5 consecutive amino. . . (10) an antibody (XI) or its fragment which binds to any of the above polypeptide sequences;
(11) an antisense **oligonucleotide** (XII) comprising at least 5 **nucleotide** bases of a polymorphic site of (I);
(12) detecting (M1) (I), by a method chosen from restriction fragment length polymorphism detection based on allele specific restriction endonuclease cleavage, hybridization with allele specific **oligonucleotide probes, oligonucleotide**

arrays, allele specific polymerase chain reaction (PCR), mismatch repair detection (MRD), denaturing gradient gel electrophoresis (DGGE), single strand conformation polymorphism detection (SSCP), RNAase cleavage at mismatched bp chemical or cleavage of heteroduplex DNA, methods based on allele specific **primer** extension, genetic bit analysis (GBA), **oligonucleotide** ligation assay (OLA), allele specific ligation chain reaction (LCR), gap, radioactive and/or **fluorescent** DNA sequencing, and peptide nucleic acid (PNA) assays;

(13) identifying (M2) a polymorphism of (I) in a mammal, by preparing a sample of cells or tissue of the mammal, **probing** the tissue or cell with all or a portion of a polymorphism of (I) under conditions where hybridized DNA can. . . analog of NAT-2 or a compound which is an agonist or antagonist of (I), its variant or fragment;

(15) **labeling** (M4) an individual in a clinical trial, by producing a library of SNPs including the polymorphic sites of (I) and. . . - Gene therapy; Modulator of (I).

USE - (I) is useful for diagnosis and gene therapy, to identify DNA **probes** for NAT-2 genes, PCR **primers** to amplify NAT-2 genes and regulatory elements of the NAT-2 genes. (I) is useful for identifying individuals and in paternity. . . characterize individuals in terms of haplotypes and other sub-groupings, such as investigation of susceptibility to treatment with particular drugs. The **polynucleotide** sequences are particularly useful as components in databases useful for sequence identity and other search analyses. (IX) is useful as. . . for a patient receiving a therapeutic composition metabolized by NAT-2 such as isoniazid, phenylzine, hydrazine, dapsone, procainamide, sulfamethazine and other **sulfonamides**. The prognosis protocol includes prediction of drug efficacy, prediction of patient's prognosis, prediction of drug interaction and prediction of adverse. . .

MC CPI: B04-B03C; B04-C01A; B04-C01B; B04-C01C; B04-C01D; B04-C01E; B04-C01F; B04-C01G; **B04-E01**; B04-E02F; **B04-E05**; B04-E06; B04-E08; B04-E09; B04-E10; B04-F0100E; B04-G01; B04-L04; B04-N04B0E; B11-C07B3; B11-C07B5; B11-C08D1; B11-C08E2; B11-C08E3; B11-C08E4; **B11-C08E5**; B11-C08F1; B11-C08F2; B11-C10; B12-K04A; B12-K04E; **B12-K04F**; B14-A01B1; B14-H01; B14-L01; B14-L06; B14-S03; D05-C11; D05-H09; D05-H11; D05-H12A; D05-H12D1; D05-H12D2; D05-H12E; D05-H14; D05-H16A; D05-H17A6

L14 ANSWER 3 OF 6 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2001-104835 [12] WPIX
CROSS REFERENCE: 2005-067563 [08]
DOC. NO. NON-CPI: N2001-077759
DOC. NO. CPI: C2001-030929
TITLE: New **fluorescent** cyanine **labels** containing **sulfonamido** linker.
DERWENT CLASS: B04 D16 E13 E23 S03
INVENTOR(S): CAPUTO, G; CIANA, L D; DELLA CIANA, L; DELLA, C L
PATENT ASSIGNEE(S): (INNO-N) INNOSENSE SRL; (VISE-N) VISEN MEDICAL INC
COUNTRY COUNT: 29
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 1065250	A1	20010103	(200112)*	EN	94
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
AU 2000042581	A	20010111	(200112)		
CA 2312099	A1	20010102	(200114)	EN	

BR 2000005843 A 20020102 (200206)
US 6448008 B1 20020910 (200263)
AU 776841 B2 20040923 (200480)
EP 1065250 B1 20041208 (200480) EN
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
DE 69922498 E 20050113 (200506)
DE 69922498 T2 20051208 (200581)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1065250	A1	EP 1999-112696	19990702
AU 2000042581	A	AU 2000-42581	20000621
CA 2312099	A1	CA 2000-2312099	20000622
BR 2000005843	A	BR 2000-5843	20000703
US 6448008	B1	US 2000-609035	20000630
AU 776841	B2	AU 2000-42581	20000621
EP 1065250	B1	EP 1999-112696	19990702
	Related to	EP 2004-23147	19990702
DE 69922498	E	DE 1999-622498	19990702
		EP 1999-112696	19990702
DE 69922498	T2	DE 1999-622498	19990702
		EP 1999-112696	19990702

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 776841	B2 Previous Publ.	AU 2000042581
DE 69922498	E Based on	EP 1065250
DE 69922498	T2 Based on	EP 1065250

PRIORITY APPLN. INFO: EP 1999-112696 19990702; EP 2004-23147 19990702

AN 2001-104835 [12] WPIX
CR 2005-067563 [08]
AB EP 1065250 A UPAB: 20051216
NOVELTY - **Fluorescent** cyanine **labels** containing a **sulfonamido** linker are new.

DETAILED DESCRIPTION - **Fluorescent** cyanine compounds of formula (I) containing a **sulfonamido** linker are new:

X1, X2 = -O-, -S-, -CMe2 or -C=CH2;

Y1, Y2 = non-metal atoms required to form a benzo-condensed or naphtho-condensed ring;

Q = a conjugated moiety that increased the **fluorescent** quantum yield and stability of (I);

R1, R2 = H, 1-4C alkyl, 1-4C alkylensulfonic or 1-4C alkylensulfonate group;

R3, R4, R5 = H, sulfonic, 1-4C alkylensulfonic, 1-4C alkylensulfonate or SO2NH(CH2)m-W-(CH2)nZ;

W = absent or -SO2NH-, -O-, -COO or -CONH-;

n, m = 0-12; provided that m+n = at most 12 and at least 1 of m and n is 0;

Z is or contains a N, O, S nucleophilic functionality, or a functionality capable of reacting with N, O or S nucleophiles;

provided that at least 1 of R1-R5 contains a sulfonic or sulfonate group.

INDEPENDENT CLAIMS are included for:

(a) nucleic acid **probes**, immunologically binding reagents, **nucleotides** and nucleosides **labelled** with (I); and

(b) (2) use of the nucleic acid **probes** and immunologically binding reagents **labelled** with (I) for assay of an analyte in a sample.

USE - (I) are useful as **labels** in immunoassays, for detection of nucleic acids (RNA and/or DNA), and for **labelling probes** for DNA sequencing.

Dwg.0/57

TI New **fluorescent** cyanine **labels** containing **sulfonamido** linker.

AB EP 1065250 UPAB: 20051216

NOVELTY - **Fluorescent** cyanine **labels** containing a **sulfonamido** linker are new.

DETAILED DESCRIPTION - **Fluorescent** cyanine compounds of formula (I) containing a **sulfonamido** linker are new:

X1, X2 = -O-, -S-, -CMe2 or -C=CH2;

Y1, Y2 = non-metal atoms required to form a benzo-condensed or naphtho-condensed ring;

Q = a conjugated moiety that increased the **fluorescent** quantum yield and stability of (I);

R1, R2 = H, 1-4C alkyl, 1-4C alkylensulfonic or 1-4C alkylensulfonate group;

. . . that at least 1 of R1-R5 contains a sulfonic or sulfonate group.

INDEPENDENT CLAIMS are included for:

(a) nucleic acid **probes**, immunologically binding reagents, **nucleotides** and nucleosides **labelled** with (I); and

(b) (2) use of the nucleic acid **probes** and immunologically binding reagents **labelled** with (I) for assay of an analyte in a sample.

USE - (I) are useful as **labels** in immunoassays, for detection of nucleic acids (RNA and/or DNA), and for **labelling probes** for DNA sequencing.

Dwg.0/57

MC CPI: B04-B03; **B04-E01**; **B04-E05**; B06-H; B11-C07B3; B11-C08E4; **B11-C08E5**; **B12-K04F**; D05-H09; D05-H11; D05-H12D1; D05-H18A; E06-H

EPI: S03-E14H

TT TT: NEW **FLUORESCENT** CYANINE **LABEL** CONTAIN SULPHONAMIDO LINK.

L14 ANSWER 4 OF 6 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2000-349553 [30] WPIX

DOC. NO. NON-CPI: N2000-261898

DOC. NO. CPI: C2000-106227

TITLE: Staining immobilized nucleic acids for detecting nucleic acids in a sample by hybridizing target DNA material to the DNA **probes** present at its proximity on a solid substrate and binding a **dye** for detection.

DERWENT CLASS: B04 D16 J04 S03

INVENTOR(S): FOOTE, R S; JACOBSON, S C; RAMSEY, J M

PATENT ASSIGNEE(S): (LOCK) LOCKHEED MARTIN ENERGY RES CORP

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 6056859	A	20000502	(200030)*		12

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 6056859	A	US 1997-800241	19970212

PRIORITY APPLN. INFO: US 1997-800241 19970212
AN 2000-349553 [30] WPIX
AB US 6056859 A UPAB: 20000624
NOVELTY - Staining immobilized nucleic acids by affixing a DNA **probe** to a solid substrate (12), with a disposed channel, of a microchip structure (10), hybridizing to the target DNA molecule which is passed through the channel and binding a **fluorescent dye** , which is moved through the channel under the influence of an externally applied electric potential, to the hybridized complex for detection, is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the apparatus useful for staining and detecting immobilized nucleic acids, comprising a solid substrate, with at least one disposed channel, affixed to a DNA **probe**, a device for moving target DNA material through the channel into the proximity of the DNA **probe** for hybridization, a device comprising an externally applied electric potential for moving a **fluorescent dye** into the proximity of hybridized complex for its binding and a detector for detecting the **fluorescence** of the hybridized, **dye** bound DNA at the hybridization site of the channel.

USE - For staining and detecting immobilized nucleic acid molecules (claimed) in biological samples for clinical and biological experiments.

ADVANTAGE - Pre-**labeling** in hybridization arrays is avoided as the technique is simple and has potentially improved detectability.

DESCRIPTION OF DRAWING(S) - The figure shows the microchip structure useful for staining immobilized nucleic acids.

Microchip structure 10

Solid substrate 12

Dwg.1/6

TI Staining immobilized nucleic acids for detecting nucleic acids in a sample by hybridizing target DNA material to the DNA **probes** present at its proximity on a solid substrate and binding a **dye** for detection.

AB US 6056859 UPAB: 20000624
NOVELTY - Staining immobilized nucleic acids by affixing a DNA **probe** to a solid substrate (12), with a disposed channel, of a microchip structure (10), hybridizing to the target DNA molecule which is passed through the channel and binding a **fluorescent dye** , which is moved through the channel under the influence of an externally applied electric potential, to the hybridized complex for. . . staining and detecting immobilized nucleic acids, comprising a solid substrate, with at least one disposed channel, affixed to a DNA **probe**, a device for moving target DNA material through the channel into the proximity of the DNA **probe** for hybridization, a device comprising an externally applied electric potential for moving a **fluorescent dye** into the proximity of hybridized complex for its binding and a detector for detecting the **fluorescence** of the hybridized, **dye** bound DNA at the hybridization site of the channel.

USE - For staining and detecting immobilized nucleic acid molecules (claimed) in biological samples for clinical and biological experiments.

ADVANTAGE - Pre-**labeling** in hybridization arrays is avoided as the technique is simple and has potentially improved detectability.

DESCRIPTION OF DRAWING(S) -. . .

TECH UPTX: 20000624

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: Preferably, both DNA **probe** and the target molecule are simultaneously moved to the solid substrate for hybridization. At least one DNA **probe** is affixed substantially throughout the length of at least one channel of the substrate, and target DNA, **fluorescent dye** and other reagent are transported through the channel. Target DNA and **fluorescent dye** are moved by applying electric potentials across the channel so as the impart electroosmotic or electrophoretic movement of the target DNA to the **probe**. **Fluorescent dye** is further moved by applying hydraulic pressure to the channel. Multiple DNA **probes** are affixed to the discrete site within the channel of the microchip structure. Preferred Apparatus: The solid substrate has channel patterns including the number of channels for the movement of target DNA and the **fluorescent dye**. A device for applying the hydraulic force to at least one channel at a level sufficient for moving target DNA to the **probe** is also provided. Preferred **Oligonucleotides**: **Probe** and target material are preferably RNA material. **Oligodeoxynucleotides**, **oligoribonucleotides**, peptide nucleic acids and **oligonucleotide** analogs containing modified **internucleotide** linkages such as phosphotriester, phosphorothioate, phosphorodithioate, methylphosphonate, phosphoramidate, carbonate, carboxymethyl, acetamidate, carbamate, peptide, thioether, sulfonate, **sulfonamide**, sulfamate, sulfide, sulfoxide, sulfone, formacetal, thioformacetal, methylhydroxylamine, N-cyanoguanidine or alkylsilyl linkages. **Oligonucleotide** analogs contains a modified sugar such as 2'-halo, 2'-O-alkyl or 2'-O-allyl ribose sugars or a modified heterocyclic base comprising 5-fluorouridine,. . .

MC CPI: **B04-E01**; **B04-E05**; B11-C07B3; **B11-C08E5**; **B12-K04F**; D05-H09; D05-H10; D05-H12A; D05-H12B; D05-H12D1; D05-H12D6; D05-H13; D05-H18; J04-B01

EPI: S03-E03

TT TT: STAIN NUCLEIC ACID DETECT NUCLEIC ACID SAMPLE TARGET DNA MATERIAL DNA **PROBE** PRESENT PROXIMITY SOLID SUBSTRATE BIND **DYE** DETECT.

L14 ANSWER 5 OF 6 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2000-104606 [09] WPIX
CROSS REFERENCE: 2001-662458 [70]
DOC. NO. CPI: C2000-031317
TITLE: Nucleic acid hybridization assay composition for hybridization assay procedures.
DERWENT CLASS: B02 B04 D16
INVENTOR(S): HURLEY, I; RABBANI, E
PATENT ASSIGNEE(S): (ENZO-N) ENZO DIAGNOSTICS INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 5998135	A	19991207	(200009)*		53
US 6239271	B1	20010529	(200132)		

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
US 5998135	A	Cont of	US 1989-314995	19890224
		Cont of	US 1994-194215	19940209
			US 1995-486053	19950607
US 6239271	B1	Cont of	US 1989-314995	19890224
		Cont of	US 1994-194215	19940209
		Cont of	US 1995-486053	19950607
			US 1999-386695	19990831

FILING DETAILS:

PATENT NO	KIND		PATENT NO
US 6239271	B1	Cont of	US 5998135

PRIORITY APPLN. INFO: US 1989-314995 19890224; US
1994-194215 19940209; US
1995-486053 19950607; US
1999-386695 19990831

AN 2000-104606 [09] WPIX
CR 2001-662458 [70]
AB US 5998135 A UPAB: 20011227

NOVELTY - A nucleic acid hybridization composition (I), comprising **nucleotides** bound to a lanthanide metal or fluorophore (acting either as energy donor or acceptor) and a solid matrix with two intercalators attached to its surface (one intercalator is capable of capturing double stranded nucleic acid (dsDNA) and the other optionally comprises a fluorophore (both act as energy donors or acceptors)), is new.

DETAILED DESCRIPTION - A nucleic acid hybridization composition comprises oligo/**polynucleotides** bound (directly or indirectly) to a lanthanide metal or a fluorophore (acting either as energy donor or acceptor) and a solid matrix with two intercalators attached. One is capable of capturing a dsDNA and the other optionally comprises a fluorophore. Both of them act as either energy donors or acceptors. Upon hybridization of the oligo/**polynucleotide** to a complementary **polynucleotide**, energy is transferred from the donor to the acceptor (which are positioned within close proximity to allow this).

INDEPENDENT CLAIMS are also included for the following:

(1) a nucleic acid hybridization assay process for detecting the presence of nucleic acid sequences of interest, comprising contacting the sample containing the nucleic acids of interest (in a single stranded form) to (I) and detecting the energy emitted from the energy acceptor; and

(2) a kit comprising (in a packaged combination) reagents for detecting the presence of nucleic acids in samples, comprising a container with solid matrices bound to its surface with a first intercalator capable of capturing dsDNA, a second container with a hybridizable oligo/**polynucleotide** bound (directly or indirectly) to a lanthanide metal or fluorophore (acting either as energy donors or acceptors) and final container for a second intercalator optionally bound to a fluorophore (acting either as energy donors or acceptors) (the **fluorescent** emissions of the first and second intercalators have different wavelengths).

USE - In hybridization assay techniques for detecting the presence of an analyte by means of energy transfer.

ADVANTAGE - Use of intercalator bound solid matrix serves to capture and concentrate the duplexes formed between the target

polynucleotide and the **probe**. This allows hybridization with significantly more rapid rates. The detection complex is present on the surface, therefore it is more completely and precisely localized for generating a much stronger signal. Since the intercalator serves to capture the hybrid, background emission is reduced, subsequently resulting in more accurate quantitative determination of target **polynucleotides**.

Dwg.0/0

AB US 5998135 UPAB: 20011227

NOVELTY - A nucleic acid hybridization composition (I), comprising **nucleotides** bound to a lanthanide metal or fluorophore (acting either as energy donor or acceptor) and a solid matrix with two. . . a fluorophore (both act as energy donors or acceptors)), is new.

DETAILED DESCRIPTION - A nucleic acid hybridization composition comprises oligo/**polynucleotides** bound (directly or indirectly) to a lanthanide metal or a fluorophore (acting either as energy donor or acceptor) and a. . . the other optionally comprises a fluorophore. Both of them act as either energy donors or acceptors. Upon hybridization of the oligo/**polynucleotide** to a complementary **polynucleotide**, energy is transferred from the donor to the acceptor (which are positioned within close proximity to allow this).

INDEPENDENT CLAIMS. . . solid matrices bound to its surface with a first intercalator capable of capturing dsDNA, a second container with a hybridizable oligo/**polynucleotide** bound (directly or indirectly) to a lanthanide metal or fluorophore (acting either as energy donors or acceptors) and final container for a second intercalator optionally bound to a fluorophore (acting either as energy donors or acceptors) (the **fluorescent** emissions of the first and second intercalators have different wavelengths).

USE - In hybridization assay techniques for detecting the presence. . . transfer.

ADVANTAGE - Use of intercalator bound solid matrix serves to capture and concentrate the duplexes formed between the target **polynucleotide** and the **probe**. This allows hybridization with significantly more rapid rates. The detection complex is present on the surface, therefore it is more. . . the intercalator serves to capture the hybrid, background emission is reduced, subsequently resulting in more accurate quantitative determination of target **polynucleotides**.

Dwg.0/0

TECH UPTX: 20000218

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Arrangement: Proximate distance between the **oligonucleotides** and sample the **nucleotide** is equal to or less than Furster's radius (preferably it is 30 Angstromdegrees or less).

Preferred Metals: The lanthanide metal may. . . penta acetic acid (DTPA) or with trans diaminocyclohexane tetra acetic acid (DCTA). A lanthanide chelate may be bound to the oligo/**polynucleotide** by a linkage group which may be allylamine.

Preferred Compounds: The fluorophore selected may be a naphthalene **sulfonamide** or a pyrene compound. The first intercalator is bound to the surface by a linkage group. The solid matrix comprises. . .

MC CPI: **B04-E01**; **B04-E05**; **B11-C08E5**; B12-K04A; B12-K04E; **B12-K04F**; D05-H02; D05-H09; D05-H10; D05-H12D1; D05-H18

L14 ANSWER 6 OF 6 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2000-013268 [01] WPIX
DOC. NO. NON-CPI: N2000-010275

sample (S1), while another enzyme (E2) is used as a **label** for the bound target sample (S2). Sample (S1) is reacted with chemiluminescent peroxidase-substrate and a peroxide to produce the chemiluminescent signal. This signal of sample (S1) is detected. Sample (S2) is reacted with chemiluminescent substrate, specific to its **labeled** enzyme and an inhibitor of peroxidase enzyme, which terminates the chemiluminescent signal of sample (S1) and produces the chemiluminescent signal of sample (S2), which is then detected.

USE - The method is useful for determining presence of genetic mutations (claimed), for multiplex DNA sequencing (claimed), for DNA finger printing, for detecting several DNA markers or **probes** on a single Southern blot.

ADVANTAGE - The sequential detection method eliminates the need to strip and **reprobe** Southern, Northern and Western blots.

Dwg.0/4

TI Method of sequential chemiluminescent detection of two uniquely **labeled** DNA samples, used for determining presence of genetic mutations and DNA sequencing.

AB . . .

- Two target samples (S1,S2) are immobilized and bonded with specific binding agents (B1,B2) to form a pair of uniquely **labeled** target samples. The sample S1 is detected using peroxidase enzyme substrate complex, while the sample S2 is detected by a. . . contacted with respective binding agents (B1,B2) to form two bonded pairs of target samples. Peroxidase enzyme is used as a **label** for the bound sample (S1), while another enzyme (E2) is used as a **label** for the bound target sample (S2). Sample (S1) is reacted with chemiluminescent peroxidase-substrate and a peroxide to produce the chemiluminescent signal. This signal of sample (S1) is detected. Sample (S2) is reacted with chemiluminescent substrate, specific to its **labeled** enzyme and an inhibitor of peroxidase enzyme, which terminates the chemiluminescent signal of sample (S1) and produces the chemiluminescent signal. . . presence of genetic mutations (claimed), for multiplex DNA sequencing (claimed), for DNA finger printing, for detecting several DNA markers or **probes** on a single Southern blot.

ADVANTAGE - The sequential detection method eliminates the need to strip and **reprobe** Southern, Northern and Western blots.

Dwg.0/4

TECH UPTX: 20000105

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: B1 is **labeled** with a hapten (H1) and B2 is **labeled** with H2, which is different from H1. The peroxidase enzyme is conjugated with a binding agent B3 which binds to H1 and E2 is conjugated with a binding agent B4 which binds to H2. Alternately, B1 is directly **labeled** with peroxidase enzyme and B2 is directly **labeled** with E2. Samples S1 and S2 are proteins which are detected by Western blot assay method. Preferred Compounds: The haptens H1 and H2 are chosen from biotin, **fluorescein** and digoxigenin. The chemiluminescent substrate for E2 is an enzymatically triggerable dioxetane of formula (I) and (II):
A1 and A2 =. . . general formula (III):
R = alkyl, heteroalkyl, aralkyl groups;
R1-R8 = light producing groups;
C(= O)-Y = ester, thioester or **sulfonamide.**
A groups adjacent to R1-R8 can constitute the group CH=CH-CH=CH, hence forming benzo fuzed ring. Alternately, the N-alkylacridan-9-carboxylate derivative has formula. . . binding agents B1 and B2 (which have the respective complementary nucleic acid sequences) get bonded. The sample S1 contains the **nucleotide** sequence of a normal gene and sample S2

contains the sequence of a mutated gene.
Preferred Materials: The solid support. . .

MC CPI: B01-D01; B04-B03C; B04-B04C7; **B04-E01**; B04-E02B; B04-E03B; **B04-E05**; B04-G01; B04-L01; B04-L03B; B05-B01N; B05-C07; B05-C08; B06-A02; B06-D11; B06-F03; B07-A04; B07-D09; B10-A15; B10-A16; B11-C07A4; B11-C07B4; B11-C08D1; B11-C08E3; B11-C08E4; **B11-C08E5**; **B12-K04F**; B12-M09; B14-D05B; D05-A01A; D05-A01B1; D05-H09; D05-H10; D05-H12B1; D05-H18A
EPI: S03-E04E; S03-E14H; S03-E14H4